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Byzantine Aesthetics and the Concept of Symmetry

Michael Selzer

A critical examination of the prevailing assumption that "symmetry was an abiding principle of Byzantine composition" (*Oxford Dictionary of Byzantium*) leads the author to significant new insights about the art and architecture of Byzantium and, possibly, also about the role of Byzantine aesthetics in the birth of the Italian Renaissance.

Michael Selzer is the author of *Symmetry Fallacies,* also published by the KeepAhead Press.

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Michael Selzer - Byzantine Aesthetics and the Concept of Symmetry

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Hagia Sophia: Seraph

Byzantine Aesthetics and the Concept of Symmetry

Michael Selzer

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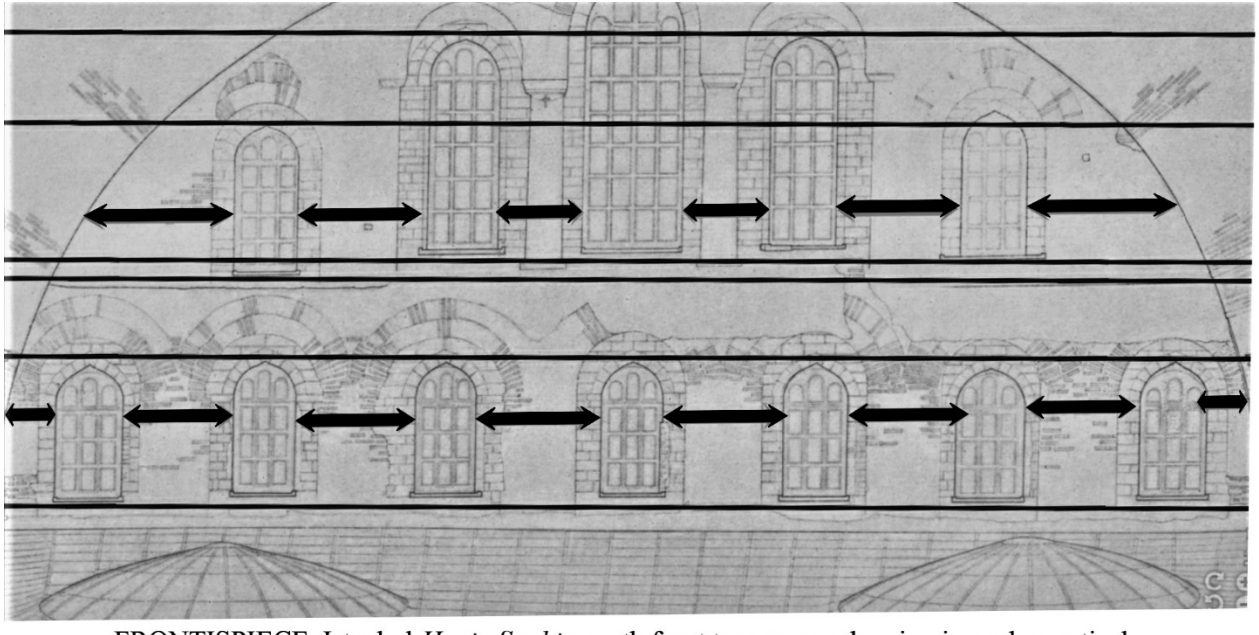
Byzantine Aesthetics and the Concept of Symmetry



FRONTISPIECE Istanbul:*Hagia Sophia* south front tympanum showing irregular vertical and horizontal window alignments

Byzantine Aesthetics and the Concept of Symmetry

Michael Selzer

"Symmetry was one of the cardinal notions of Byzantine aesthetics … an abiding principle of Byzantine composition".

– *Oxford Dictionary of Byzantium,* pp.1988-9.

"If the soul is impartial in receiving information, it devotes to that information the share of critical information it deserves, and its truth or untruth thus becomes clear. However, if the soul is infected with partisanship for a particular opinion or sect, it accepts without a moment's hesitation the information agreeable to it. Prejudice and partisanship obscure the critical faculty and preclude critical investigation. The result is that falsehoods are accepted and transmitted".

– Ibn Khaldun, *The Muqaddimah* (Princeton abridged ed.), p.35.

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COVER ILLUSTRATION

One of the *s'raphim* or celestial beings, that guarded *Hagia Sophia's* great dome on each of its four pendentives. The placement of the figure, the figure itself, and the decorative elements of the borders, are all asymmetric. According to reports, the Erdogan regime has recently concealed the images behind coats of paint or plaster.

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10 9 8 7 6 5 4 3 2

Thessalonica

March 15 – August 7, 1943

לזכור ולא לשכוח
לזכור ולא לסלוח

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Addenda and Corrigenda

1. [add to pp. 39*ff.*]
   From Article 11 of *the Venice Charter for the Conservation and Restoration of Monuments and Sites* (1964):
   > "The valid contributions of all periods to the building of a monument must be respected, since unity of style is not the aim of a restoration. *When a building includes the superimposed work of different periods, the revealing of the underlying state can only be justified in exceptional circumstances and when what is removed is of little interest and the material which is brought to light is of great historical, archaeological or aesthetic value, and its state of preservation good enough to justify the action. Evaluation of the importance of the elements involved and the decision as to what may be destroyed cannot rest solely on the individual in charge of the work*" [emphasis added].

2. [add to chapter 3]:
   Mathew (1963, p. 91) has the Silentiary, in part 2, line 273 of his description of *Hagia Sophia*, refer to certain decorations as "beautifully wrought in skilled symmetry", but I do not find "symmetry" in the original text. Comp. fn. 20, p. 126, *below.*

2. (Overleaf; add after *fig.* 22,p.81)
   Enlarged sections of the floor plan of *Hagia Sophia* showing both asymmetric and symmetric details of the narthices, and of the floor plan generally.

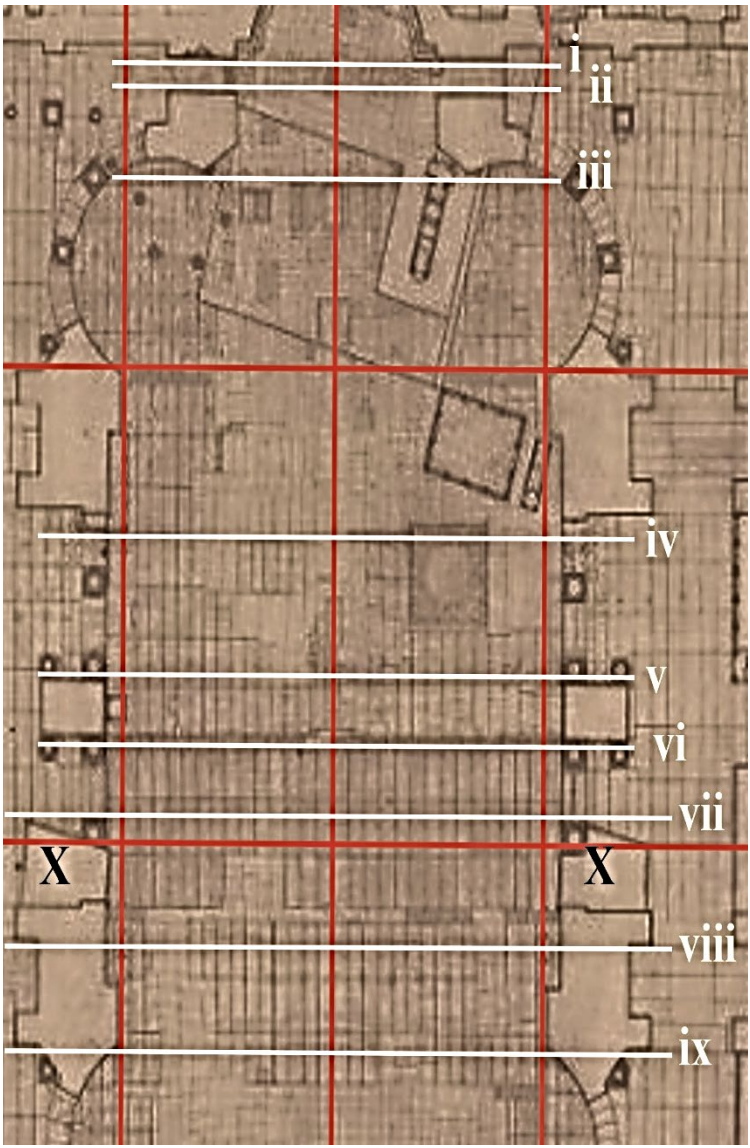

*fig.*22a: *Hagia Sophia,* enlarged section of floor plan.

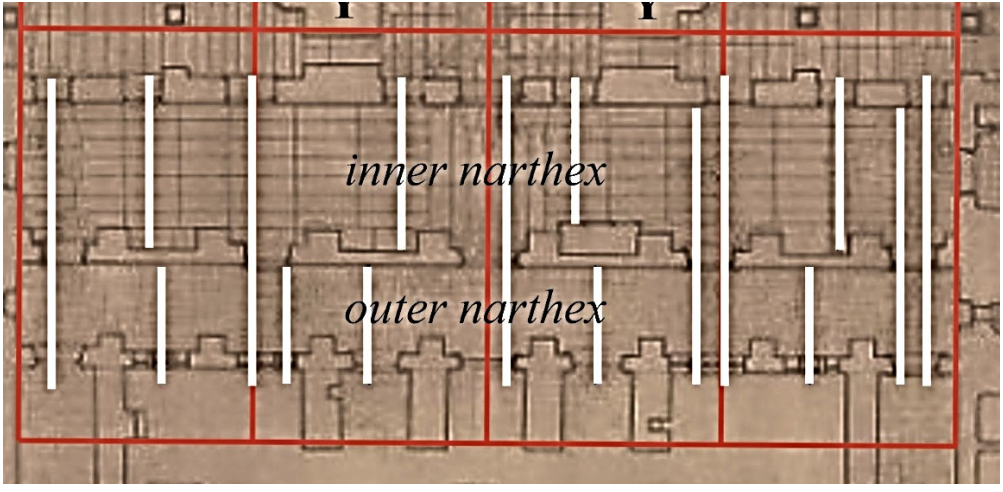

*fig.*22b: *Hagia Sophia,* enlarged section of floor plan showing narthex doorways.

Introduction

This little book grew out of my interest in the concept of symmetry (in the conventional sense of the word): its history, its psychology, and the many – and in a number of cases, the consequential – fallacies associated with it.[1] With some confidence, I assign the origins of this concept to Italy in the middle of the 15th century: it was a Renaissance construct, to begin with. I was gratified to establish this, yet I knew that I could not let things rest there, for my finding left undiscovered the source or sources from whom Italians in the fifteenth century – among them Leo Battista Alberti and Pope Pius II – themselves acquired the concept. (There are reasons for thinking that it was not original to them.) I came across some comments by Goethe, the poet, to the effect that symmetry was a Byzantine concept, and the source from which the Italians acquired it. Goethe's comments, as we will see presently, are inept and reckless – astonishingly so, in fact – but the question had planted itself in my mind: was the concept of symmetry originally a Byzantine one? Could it have been part of the well-documented flow of ideas and artifacts from Byzantium to the West that played an important role in igniting the Renaissance?

The question intrigued me greatly but I knew that I lacked the qualifications to do it justice. *Encore de l'audace, toujours de l'audace* was all very well, but then look how Danton ended up! I set the idea aside…

It was confinement to my aerie in the Rockies – the greatly heightened sense of the fragility of things and perhaps also of the shortness of time left, that the pandemic has induced – that decided me to move forward, nevertheless,

[1] See my *Symmetry Fallacies* (rev.ed., 2021), referred to here as *Fallacies.*

with this project. The quest itself, the joyful introduction to new information, both intellectual and aesthetic, that it brought me, the wrestling with the materials to make sense of them, the gratitude that I was once again *engaged* in explorations that filled my days: these were a tremendous boon! I felt I had acquired a delightful new companion. At night I had to tear myself away from the work; in the morning I could hardly wait to examine materials I had uncovered the previous day, to make notes, to decide where I would turn next. I never doubted that my investigation was something that I was doing for myself, for my entertainment and for my enlightenment. I was fully satisfied that, even if nothing came of it all, I would have enjoyed and enriched myself at a time in my life when it had seemed that only darkness lay ahead.

The reader will decide whether my decision, after some hesitation, to publish this work was justified. In this context, I should make the disclosures that will forewarn anyone who glances at these pages not to expect too much. I began this undertaking shortly after my 80th birthday, and although I am not yet gaga, I am frequently forced to recognize that my cognitive faculties are not what they used to be (which, perhaps, is not saying all that much!) My command of Greek, moreover, is less than negligible; I have never been in Turkey or in the Balkans, and the one time I was briefly in Greece, I focused my attention entirely on Classical art and architecture; the only Byzantine structures I have seen were decades ago as a tourist in Venice and Ravenna. The reader should also know that I recognize, of course, but for practical reasons could not adequately take into account, the fact that "Byzantium" does not denote an unvariegated and unchanging entity but a great and complex civilization that lasted for over a thousand years and extended over vast areas. Neither do I take into account, except in one or two instances, repairs and alterations made to buildings before 1453. For my

purposes, those buildings fall into my undifferentiated category of "Byzantine".

That said, I am bold enough to claim that although the topic of this little book is a significant one, it has seldom been addressed before now, and I hope that readers will discover on its pages a contribution, even if only a small one, to an understanding of it.

Writing and reading during these gloomy times are glorious distractions, but it is also because of the pandemic that I am unable to use libraries, which has added an extra layer of shortcomings to what I am attempting. On the other hand, the internet has proved to be a marvelous resource. It is extraordinary how much valuable printed material and how many images can be downloaded, and how easy (and pleasant!) it is to listen in to seminars and lectures around the world. Thanks to the internet, I have enjoyed a spreading online network of contacts that reaches as far back as someone with whom I was at boarding school, and across many countries and three continents. To these people, then, my thanks for their help, their encouragement, their forbearance. I would mention in particular Charles Barber of Princeton; Gabriele Castiglia, of the *Pontificio Istituto di Archeologia* in Rome; Judith Herrin of King's College, London; Michael Niedermeier of the *Berlin-Brandenburgische Akademie der Wissenschaften*; Elisabeth Schiffer of the *Oesterreichischen Akademie der Wissenschaften* in Vienna; Naomi Tiley of the Balliol College Library; and Christianna Veloudaki, who has been as enterprising and conscientious a research assistant as I could have hoped for.

Michael Selzer
Colorado Springs
May, 2021

Chapter One.
Symmetry: various points to bear in mind.

Terminology: During the past twenty-five hundred years or so the word "symmetry" – in its earliest form, the Greek συμμετρία, *symmetria* - has been used with a number of quite different meanings: sometimes even by the same author (Plato, for example[2]) and sometimes, indeed, even in the same book (as in the bewitching erotic novel, *Hypnerotomachia Poliphili,*[3] that was published in Venice in 1499). So frustrating has this been for some lexicographers that on occasion we find them throwing up their hands in dismay (as it were) and either ignoring the word entirely;[4] or arbitrarily settling for one or two of its many meanings;[5] or defining it as – "symmetry"! [6] On the other hand, there are numerous *soi disant* scholars who blithely assume that the word has always and everywhere had as its sole meaning what it conventionally (though in fact not invariably) means today,

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[2] *Fallacies,* pp.56-58.

[3] *ibid,* pp. 305-306.

[4] e.g., E.A. Sophocles' *Glossary of Later and Byzantine Greek* (1860).

[5] Sophocles' later *Greek Lexicon of the Roman and Byzantine Periods …* (1887) has but a single entry, συμ-μέτρησις, which it gives as a Classical term meaning "measurement". In his Greek *Glossarium* of 1688 Du Cange, too, overlooks the variety of meanings ascribed to the term, but the single one he offers does approach what is now the most conventional meaning: "… ο εις πλούσιος, έτερος σύμμετρος", i.e., the two friends were *equally* wealthy.

[6] It is particularly startling to find that, in Oxford's authoritative Liddell and Scott *Greek-English Lexicon* (entry under "*συμμετρ—*"), this tautology has survived a succession of editors over the course of more than a century and a half. Not to be outdone, the contemporary LBG – the *Lexikon zur byzantinischen Gräzität* – defines συμμετρικός as *symmetrisch*, which of course also leaves us where we started.

namely a shape whose lateral halves precisely mirror each other. This has led to many errors, some of which are amusing, some of which are frustrating, and some of which are outrageous, as for instance the oft-repeated fallacy that this is what Vitruvius meant when he used the term.[7] Should we perhaps be grateful that no academic has yet tried to persuade us that the two halves of Blake's "tyger" mirrored each other in their "fearful symmetry"?

The language of Byzantine aesthetics has added to these terminological problems. There, as George Zografidis notes, the vocabulary employed for concepts such as symmetry, while seeming familiar, "is completely different from the modern, and thus easily misunderstood".[8] We lose sight of this at our peril.

Options for Avoiding Cognitive Dissonance: There are other difficulties that seem to inhere in the subject. One of the most intractable stems from a preference in our culture for symmetric over asymmetric forms.[9] I am not concerned here with the consequences of this for our aesthetic choices (though that is indeed a troubling matter!), but with the rather common tendency to which it leads of seeing asymmetric forms as symmetric. (The opposite, of seeing symmetric forms as asymmetric is rare, indeed almost unknown.) I have discussed this phenomenon, and its causes, in my *Symmetry Fallacies,* and will give just one illustration of it here. *Fig*. 1, page 6, shows a *hydria* in the Greek National Archeological Museum in Athens. It was published in a guide to that

[7] *Fallacies*, p.300, fn.56.

[8] Zografidis, 2010.

[9] The Japanese may be unique in their immunity to this affliction. See the superb study by Walter Dodd Ramberg, "Some Aspects of Japanese Architecture", *Perspecta* v.6, 1960.

*fig.*1: Ragghianti's "symmetrically and rigidly ordered" *hydria*

museum prepared by Licia Ragghianti, a widely-read art historian.

It should at once be apparent that in the decorations of this *hydria,* all the elements on one side of the notional tree trunk which also appear, in some form or the other, on the other side, differ from the latter in size and relative location and often in shape, too. It should, indeed, also be apparent that not all the elements on one side of the tree trunk are, in any form, repeated on the other. To be sure, one could say that the design on the vase has a pronounced bilateral quality. But can there be any doubt at all that the overall design is – asymmetric?

And yet, we find that in her catalog Miss Ragghianti describes the designs on this hydria as "symmetrically and rigidly ordered".[10]

This is but one of a myriad of instances in which the preference our culture ingrains in us for seeing things as symmetric – or perhaps even more strongly, the need it has ingrained in us *not to see* asymmetric shapes for what they are – leads otherwise sensible people to misperceive objects they should be seeing perfectly clearly.[11]

Nor is this a recent or localized phenomenon. I give what may be an instance of it from the tenth century (see chapter 4), and I suspect that it has occurred wherever the concept of symmetry was present. We shall indeed be encountering modern manifestations of it elsewhere in this book.

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[10] Ragghianti 1979, p.46.

[11] Let me add briefly here that since as far back as Alberti, one of the most persistent fallacies having to do with symmetry has been that the human body, including the face, is symmetric: *cf*., for instance, Wittkower (*Idea and Image,* 1978, p.128): "bilateral symmetry is the symmetry of the human body, and for that reason, of towering importance to mankind". Leonardo did not fall for this fallacy, for his so-called "Vitruvian Man" is not at all symmetric; neither did Filarete. See *Fallacies*, p.300-2, fn.56, and *figs.* 1.3-1.5.

I would therefore exhort anyone studying the symmetry of things always to be on guard against this bias in favor of seeing asymmetric forms as symmetric. The statement that something is symmetric, no matter how estimable the person making that statement is thought to be, should always be verified independently. Plans and elevations of buildings published by architectural historians and archaeologists should, for this reason, always be viewed skeptically.

It is now quite an easy matter to arrive at an accurate determination of whether a form is symmetric or asymmetric. This is done by using one of the basic graphic software programs, now widely available, to measure the relationships between different elements of a building or work of art shown in a photograph. I have used this method for some years, including on the pages of the present work.[12]

When mechanisms for avoiding cognitive dissonance are not available to shield us from the asymmetry of an object, a number of alternatives are available. A particularly ingenious one is to claim that the asymmetry of an object is in fact a device *to make the object appear symmetric*. This was the explanation that Choisy gave for the asymmetric curves he detected in the steps of the east stylobate of the Parthenon. They were intended, he asserted, to correct an optical effect that would otherwise make the steps seem to be asymmetric! Here, the asymmetry is recognized, is acknowledged – but is then used to serve the purpose of negating itself…[13]

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[12] See , as examples, *figs.* 9 and 10 below. Unhappily, even this seemingly fool-proof method can be abused. In one notorious instance, a person who was far better endowed with technical skills than with simple, down-to-earth integrity, fiddled with a photogrammatic image of the façade of Santa Maria Novella in Florence in order to depict it as symmetric.

[13] Choisy 1996, v.1, p.419. See also his "Note sur la courbure dissymétrique des degrés qui limitent au couchant la plate-forme du Parthenon", *Academie des Inscriptions et Belles-Lettres,* NS v. I (1865). For other examples see *Fallacies,* p.87.

There are other ways of dismissing unwelcome occurrence of asymmetry. Sometimes asymmetric forms will merely be execrated in terms such as "confusion and messiness", or "*una cosa perniciosissima*"[14]. Sometimes they will be blamed on the incompetence of an architect. Sometimes they will be explained as the result of earthquakes, explosions, and other physical shocks that altered a structure after it was erected; or as the result of the carelessness of construction workers. The basic principle adopted in all these instances is the one enunciated by Penrose when he asserted that the numerous asymmetries and other irregularities he found on the Parthenon's structure were unintended: "We may… always suspect some disturbing cause to exist", he declared, "when in quantities which tend to equality or some obvious proportion, a difference sensibly greater … is … found".[15] That is to say, that if a dimension is not what we expected, we should assume that it differs from what was originally intended. Less ambiguously still, asymmetry will be regarded as an aberration that must be done away with: and which then *is* done away with, with the kinds of consequences that are vividly exemplified in the horrifying (or, if you prefer, the comical) present façade of S. Maria del Fiore, the cathedral of Florence, that was built in the 19th century to replace an unacceptable, asymmetric, one that dated back to the 13th century.

My second exhortation to the reader, accordingly, is that when you recognize that something is asymmetric, do not assume that that is not how it should be, or how it had been intended by its makers to be.

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[14] James (1982, p.21) on Chartres; Sangallo the younger on the Pantheon's coffers (quoted Buddenseig 1971, p.26).

[15] Penrose 1888, p.12, fn.

The concept of symmetry and its origins in the West: I distinguish between what I somewhat arbitrarily call the *idea* of symmetry, and the *concept* of symmetry.

The idea of symmetry is descriptive. It applies to shapes whose lateral halves mirror each other. Some people require that the boundary between those two halves be demarcated by a vertical object – a line, or whatever – but I do not think that is necessary. What *is* necessary is that the two halves mirror each other precisely and in every detail (which is, after all, what it means to have something be "mirrored"). A form which falls short of this standard is not "almost" symmetric. Its symmetry is not "broken". Such a form is asymmetric!

Shapes that are symmetric have possibly always been known, *but it is only relatively recently that they have been recognized as such*. Plato's solids, for example, are symmetric, but neither Plato nor Euclid, in his elucidation of them, ever referred to the mirroring of their two lateral halves. In medieval times buildings that we recognize as symmetric were sometimes constructed but, again, their symmetry was not recognized. Rather, they were intended to conform to a doctrine that held that buildings should be designed on the square (*ad quadratum*) or triangle (*ad triangulum*).[16] Thus, the chronicler Villani (d.1348) did not complain about the shape of the plan of Florence's *Palazzo della Signoria* because it was asymmetric, but because he regarded it as *una granda diffalta di nonfarlo quadrato* – it was a big mistake not to make it square.[17]

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[16] See Nancy Wu, editor: *Ad Quadratum. The practical application of geometry in medieval architecture* (2002).

[17] *Cronica,* VIII,26. As we saw in the previous section, there is a strong tendency in our culture to see asymmetric forms as symmetric. An example that can be cited here is Goldthwaite (*Wealth and the Demand for Art in Italy 1300-1600,* p.181), who writes that the markedly asymmetric façade of this very same Palazzo della Signoria "has been called [he does not say by whom] one of the most important buildings in the history of Italian

That, then, is *the idea* of symmetry. It is one that we can confidently state was first formed, in the West, in the middle of the fifteenth century. Although it is distinct from the *concept* of symmetry, it undoubtedly acquired most of its currency from its role it as the indispensable adjunct of the concept of symmetry.

The *concept* of symmetry, for its part, which is our principal focus here, is not descriptive but prescriptive, or normative. It builds on the idea of symmetry by insisting that the things we make *must be* symmetrically shaped. The rationale it offers for this is that Nature's forms are always symmetric; that the ancient Greeks, discovering this, understood that because Nature's forms are the archetype of beauty, only symmetric forms can be beautiful; and that they therefore saw to it that everything they made was shaped symmetrically.

These claims are all nonsense, of course. Nature's shapes are *not* symmetric, and the things that we consider beautiful are far more likely to be asymmetric than symmetric. The abundant relics we possess do not support the claim that the Ancients only or even often gave the things they made symmetric form. Nor indeed is there any evidence that the idea, let alone the concept, of symmetry were known in ancient Greece or Rome, for they are distinctly innovations of the Italian Renaissance. None of these considerations, however, unassailable though they clearly are, could prevent the concept of symmetry from gaining more or less immediate, fervent, and near-universal acceptance. More than five centuries later, its dominance remains largely unchallenged.

It is perhaps indicative of its earliest, tentative and perhaps plural, beginnings, that a number of terms were originally used for the concept of symmetry. Leon Battista

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architecture for the influence of its … symmetrical façade … on the evolution of domestic architecture in the Renaissance"!

Alberti, (1404-1472), who provided it with its first (and terribly flawed) theoretical formulation, borrowed a term from Cicero (for whom, needless to say, it meant something entirely different!) and called it *collocatio.*[18] His contemporary, Pope Pius II (1405-1464), in describing a feature of his new palace in Pienza, referred to what was clearly the same concept but did so with a Latinized form of the Greek *symmetria*. And it was with the same term used by Pius, but only sometimes (as we have already seen) with the same meaning, that Francesco Colonna (1433-1527), an otherwise obscure Dominican friar, used the term in his *Hypnerotomachia,* which he wrote in the *lingua Toscana.*

The fact that Pius and Colonna derived the terms they used from the Greek suggests they did not learn about the concept from Alberti, who as we have noted, adapted a Latin word for it. Nor are there grounds for assuming that either Pius or Colonna himself formulated the concept, or that perhaps Colonna acquired it from Pius. Rather, it seems quite clear that they acquired it elsewhere, from another source or sources. Moreover, the fact that neither of them saw a need to explain to their readers what they meant by the term indicates that they believed its meaning (or meanings) were already well known to the kinds of people for whom they wrote. Neither was introducing a concept to which he had just given birth. They were using a concept that they knew was familiar to others.

We cannot be as confident that Alberti did not formulate his version of the concept himself, but acquired it elsewhere. Alberti had a penchant (even if not a great talent) for

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[18] Alberti is the only writer to have used *collocatio* with this meaning. He and later writers also used a number of synonyms, all of them Latin in origin, for "symmetry" (in our understanding of the term), but it would take us too far afield to identify them here – a task that I have in any case already accomplished in *Symmetry Fallacies.*

theorizing, and in his own way he was a creative thinker. He also had what was a decidedly original, and quasi-empirical, way of looking at the world that among other things led him to declare, nonsensically, of course, that the forms of Nature, as well as the forms of Classical art and architecture, were always shaped symmetrically. These fallacies would in due course wreak much intellectual and aesthetic havoc, and we cannot rule out the possibility (nor of course can we affirm) that they, as well as Alberti's underlying concept of symmetry, originated with him, and were not derived by him from other sources that are unknown to us. But to repeat, there are no grounds for believing that Pius or Colonna acquired the concept from Alberti.

We can trace the origins of the concept of symmetry in the West no further back than to the writings of Alberti, Pius and Colonna. It is possible, as I have suggested, though not demonstrable, that one version of the concept may have originated with Alberti. But if we leave some room for doubt about that (as we obviously must), it is inevitable that we ask ourselves: if it did not originate with him, from where did Alberti get the concept? And the same question arises, of course, with regard to Pius and Colonna. From where did *they* get the concept?

Let us begin by noting a suggestive coincidence, while postponing the decision of whether it is anything more than that. The fall of Constantinople in 1453 to Muslim forces marked the end of the 1100-year-old Eastern Roman, or Byzantine, Empire. This catastrophe accelerated the movement of emigrants from Byzantium to, principally, Italy, that had in fact begun some years earlier. Among them were men of high intellectual stature, and some brought with them ideas and artifacts of the greatest cultural importance. The Marciana library, as an example, was founded on the gift of some

700 invaluable books and codices to Venice by the great humanist and churchman, Bessarion.[19]

It was during this very time that the idea and concept of symmetry made their first appearances in Western Europe. Alberti completed his *De re aedificatoria* in 1452; Pius II his autobiographical *Commentarii* ten years later, in 1462. (The much younger Colonna may not have finished his great work until about 30 years later.) It would be irresponsible not to ask whether there is any evidence that Alberti and Pius learned about symmetry, not just the idea but the concept, too, from Byzantine scholars or texts reaching Italy as a result of the final decline and collapse of the Byzantine empire. The question does not arise in a vacuum.[20]

Symmetry in Byzantium? According to respectable opinion, symmetry in the prescriptive sense was an integral element of Byzantine aesthetics. We read in the *Oxford Dictionary of Byzantium*, for example, that "Symmetry was one of the cardinal notions of Byzantine aesthetics … an abiding principle of Byzantine composition."[21]

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[19] It is of course not unknown for great movements of refugees, such as from Tsarist and Bolshevik Russia, or from Nazi Germany, to bring significant cultural benefits to host countries. As we see today, however, that is not invariably the case.

[20] There is an extensive literature about the transmission of Byzantine culture to the West. See, for instance, Frothingham, 1894; Setton, 1956; Kitzinger, 1966; and Demus, 1970.

[21] "Symmetry", article by Kazhdan and Cutler, pp.1988-9. (The authors define symmetry, rather ineptly, as "the correspondence in position, size, or shape of the elements of an image".) Similar views are expressed by, for example Cvetković, (2006), who declares that symmetry was "the basic concept of Byzantine aesthetics"; and Mainoldi (2018) who writes of the Byzantines' "propensity to symmetry". Descriptions by art historians of Byzantine works as symmetric are readily found. Kitzinger, for example, (1977, p.85), refers to the "formal and symmetric" arrangement of the mosaic figures in the apse of San Vitale, Ravenna. Mathew (1963, pp.1, 58) illustrates what he regards as the Byzantine "emphasis on [and] delight in

And indeed, there occur in Byzantine writings a number of references to "symmetry". Their meaning is invariably obscure, though it is clear that in every instance the author thinks that the "symmetry" he mentions is a good thing. The term as employed by these Byzantines, in other words, has prescriptive connotations. In his *Chronographia,* Michael Psellos used the term at least five times.[22] It also occurs in the description, by the early 6th-century rhetorician Choricius, of the arrangement of arches in the church of St Sergius in Gaza; in Nicetas Magister's 10th century description of the *Panagia Hekatontapiliani* church on Paros; and in the late 12th century description of the church of the Holy Apostles in Constantinople by Nikolaos Mesarites.[23] The significance of such references does not lie in their quantity – they are actually few and far between – but in the very fact of their occurrence, for there is nothing comparable to them in the literature of Latin Europe before the middle of the 15th century. The fact that some Byzantines may have had a concept - even if merely the germ of a concept - of symmetry long before anyone in Western Europe lends at least *prima facie* plausibility to the idea that it may have been acquired in the West from Byzantium.

But what meaning or meanings did the term have for the Byzantines? This is the crux of the matter for us here. We cannot simply assume either that it meant what it conventionally means today or that it had another meaning or meanings altogether.

Many of the aesthetic principles that guided painters,

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exact symmetry" by citing the wing feathers and drapery of the angels in the Louvre's Barberini ivory, which, however, are quite clearly asymmetric. There are, for example, 7 feathers on one angel's wing and 8 on that of the other angel. This is another instance of the symmetry bias I discuss on p.5 *et seq.,* above.

[22] *Chronographia*.III,15; IV,31; VI.125; 186, 187. See pp. 32-33, *below*.

[23] Mango 1972, p.62 (Choricius) and p.104 (Nicetas); and Downey, 1957 (Mesarites). See Chapter 3, *below*.

sculptors and architects during the Italian Renaissance were set down in books they wrote. No similar literature was produced in the Byzantine world. There, the only literary evidence we have is to be found in the occasional – the very occasional – observations of travelers or chroniclers, and in the often-tiresome *ekphraseis* of clergymen or officials exercising their rhetorical skills.

Beyond these scraps we have the works themselves, from whose silent testimony we must infer as best we can the aesthetic principles that guided their creators' hands. Paintings, mosaics, buildings and some works of decorative art: these are the texts that we must explicate. Doing so is indeed a "precarious"[24] and more than usually inconclusive strategy, which however the student has no choice but to pursue; and it applies *a fortiori* to the study of the place occupied in the Byzantine aesthetic by the concept of symmetry.

Our task here, accordingly, will in large measure consist of inferring – even if "precariously"! – what we can about Byzantine views regarding symmetry from various works of art and architecture, and, to a much lesser degree, from a small number of literary works.

> **Excursus***: Tempting though it is to explore the question of how the Byzantines, for their part, may have acquired the concept of symmetry – if we should ultimately establish that they indeed* had *knowledge of it – this is not a challenge that I will take up here:* ne Heracles quidem adversus duos*. I will however suggest one avenue that it could prove fruitful to explore in this connection, namely, some remarks about the bilateral structure of the human body that*

[24] Zografidis, 2010. Comp. Maguire, 1981, p.6: "Since medieval Byzantine artists … have left no written statements about themselves or their work, we know little of their thought processes, other than what the monuments themselves can tell us"

Lactantius (d. circa 325) made in his de Opificio Dei. *God made the nose very beautiful, he wrote, "by the very circumstance of it being double, from which we understand how very much weight the twofold number, made firm by one simple connection, is to the perfection of things". More generally, he added that, "though the body is one, yet the whole could not be made up of single members unless it were that these should be parts on the right hand and on the left … which not only avail to some utility … but also bestow an admirable character and comeliness".*[25] *It is not difficult to imagine how these remarks could inspire artists and architects who sought "the perfection of things" for their creations or, at the very least, "admirable character and comeliness", to arrive at the concept of symmetry as an aesthetic imperative. Imagining such a possibility, of course, is a far cry from establishing it as a fact.*

I should also say that the Byzantines could not have acquired the concept as part of their heritage from the Classical world, (as Goethe, for one, claimed they did[26]*), because, as I have shown in* Symmetry Fallacies, *the Greeks and Romans did not possess that concept. The concept of symmetry appears to have been known in the world of Islam, however, and numerous exchanges between Constantinople and the Abbasids – and before them, even the Sassanians - make it reasonable to investigate the possibility that it may have entered Byzantium from* that *source.*

But that is an adventure for someone else to undertake!

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[25] Lactantius 1871, v.2, p.71. In the 11th century, Michael Psellos had a very different view of the human body, which is discussed below, p. 133.

[26] Gage, p.133.

Chapter Two.
Goethe : "a middle, an above and a below, a here and a there"

Johann Wolfgang von Goethe, (1749-1832), the great German writer and man of science, was not an admirer of Byzantine art, and acknowledged that he "was able to say little good" about it.[1] He deplored Byzantine paintings for their "gloomy oriental stillness", and as "miserable art"; characterized them variously as "strict and dry", "mummified", and "stiff and unpleasant"; and declared that he had seldom seen a Byzantine mosaic that "deserved" his attention.[2] One may doubt, indeed, whether he thought that *any* Byzantine works of art deserved his sustained attention, for his critiques of them, even in the rare instances when they were favorable, tend to be notably *limp,* and weak on substance. He elaborated his opinion of the mosaics in San Marco, for example – some "were very good", others "were poor" - only to the extent of suggesting that their quality depended on the drawings from which the mosaicists worked.[3]

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[1] Gage,1980, p.133. German: "*… von der wir wenig Loebliches zu sagen wussten"* .

[2] Goethe's remarks on symmetry and Byzantine art originally appeared in the section on Heidelberg in *Aus einer Reise am Rhein, Main und Neckar* (Goethe 1963); translations are taken from Gage, *op.cit.,* pp.133-147, and are not cited separately here. Readers unfamiliar with German may find it helpful to compare Gage's translations with those in Gombrich, 1987. A comprehensive view of Goethe's understanding of symmetry will become available when the volume of *Das Goethe Woerterbuch* containing the entry for that word is published. (I am obliged to Michael Niedermeier for showing me a draft of that entry.)

[3] Goethe, 1962, p.79.

For all the confident and far-reaching nature of his remarks about Byzantine art, however, Goethe's knowledge of it was in fact very limited: according to Gombrich, indeed, it was based on merely "a few late Russian icons that he owned".[4] His familiarity with Byzantine architecture may have been even more limited, for (as far as I have been able to determine), it was a subject to which he never referred.

Nor is there any evidence that Goethe ever sought to enlarge his knowledge of Byzantine art. We take for granted nowadays our easy access to high-quality images of enormous numbers of works of art from all around the world, but of course, this is a recent development. In Goethe's day, only a few engraved reproductions of pictures and plaster casts of sculptures were to be had, and they were usually of poor quality and could not give a reliable impression of the works they purported to depict. It was therefore only by looking at original works in private collections, or in the few museums that were then in existence, or *in situ*, principally of course in churches, that one could see what works of art actually looked like.

There was very little Byzantine art for Goethe to see in Germany. In Italy, however, there was a great abundance of it. Yet during the nearly two years Goethe spent on his *italienische Reise* as a young man, he took almost no advantage of many opportunities to familiarize himself at first hand with it. Traveling from Venice to Florence he could have made, but chose not to make, a detour to visit Ravenna, that treasury of Byzantine mosaics. In Florence he saw the Duomo and the Baptistery, in which, he wrote, though without elaboration, that "a completely new world opened up" for him; yet he remained there for mere moments and recorded no comment on the Baptistery's glorious mosaic dome interior, which is in the Byzantine idiom: "I did not wish to stay long"

[4] Gombrich, 1987.

he wrote, "… I hurried out of the city as quickly as I entered".[5] Later, in Sicily, he spent two and a half weeks in Palermo, but evidently did not visit either the church of Santa Maria dell'Ammiraglio ("La Martorana"), or the Palatine chapel, both with extensive and magnificent Byzantine mosaics.[6] After Palermo he went to Monreale, but either did not enter the cathedral to look at its astonishing mosaics, or had nothing to say about them.[7]

We must therefore not lose sight of the fact that Goethe's sweeping and seemingly authoritative and certainly dogmatic pronouncements were made by a man who did not like Byzantine art, had seen very little of it, and would not trouble himself to enlarge his experience or understanding of it. With regard to Byzantine art, Goethe was something of a *poseur.*

Yet his views about both Byzantine art and symmetry must claim our attention, for they address issues that are central to the subject of the present book. Goethe was first person, I believe, who regarded symmetry as a component of the Byzantine aesthetic. He asserted, indeed, that Byzantine art was "always" symmetric: and that symmetry was one of "the celebrated merits of the Byzantines"[8]. He was the first person,

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[5] Goethe, 1962, p.103.

[6] *Ibid*, pp.221-252.

[7] *Ibid*, p.252. Goethe's rigid selectivity in choosing what art to look at was not limited to Byzantine works. He surely must be one of the very few visitors to Assisi ever to confine his time there to inspecting the inconsequential remains of the Roman Temple of Minerva and not go to the Basilica of St Frances, one of the great repositories of medieval art. He also did not visit "the dreary Duomo", as he called Assisi's medieval cathedral, passing judgement, as was not infrequently his wont, on something he had not seen (Goethe, 1962, pp .106-109).

[8] "*An jene streng trockne Symmetrie hat sich die byzantinische Schule* immerfort *gehalten*" (Goethe 1963, p.96). Gage (p.134), unsatisfactorily, renders this as "The Byzantine School *persisted…*". It is too bad that Goethe did not

too (and as far as I know, the only person) to think that it was from Byzantium that the concept of symmetry was introduced to the rest of the "converted" world – i.e., the Latin West.[9]

To be sure, we have already seen enough to doubt Goethe's credentials as an authority on Byzantine art. Yet, we are interested here to determine what role, if any, symmetry had in the Byzantine aesthetic, and in the possibility that the concept was transmitted to the West from Byzantium. We may doubt, *a priori,* that his views on these subjects have anything to offer us, but that cannot excuse us from examining them carefully – the task to which we will devote the remainder of this chapter.

Goethe attached the greatest importance to symmetry in art generally. "Nothing we look at can be attractive without symmetry", he wrote. "Symmetrical composition" he also wrote, is one of "the rules of art"…. an element of "technical perfection" in art …. an indispensable component of "the most perfect standard of art" No matter how highly he esteemed the paintings of Rogier van der Weyden (whom he mistook for Jan Van Eyck), the lack of symmetry in their composition meant that "they fail to satisfy the strict demands of art".

This much, then, is clear: Goethe placed a very high value on symmetry in art. He believed that, without it, no work of art could be of the highest quality.

What is not *at all* clear, however, is what Goethe meant when he used the term: what he understood symmetry to be.

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identify his fellow-celebrants of Byzantine symmetry, and I am unaware of anyone, before or during his lifetime, who shared this opinion.

[9] "*…verbreiteten diese oestlichen Kunst- und Handwerkgenossen ueber die damals ganze bekehrte Welt",* Goethe 1963, p.96; Gage, p.134.

We should note, first of all, that according to the Grimms' authoritative dictionary of the German language, symmetry as the mirroring of the two lateral halves of a form had been a recognized meaning in German since at least the early 18th century.[10] We can be sure moreover that, at least

[10] This definition of symmetry in the Grimm dictionary (*Deutsches Wörterbuch*, 1854 -) is preceded by one under the sub-heading "(a)", that defines symmetry as pleasing proportion, a definition that is also to be found in English and other European languages, and that can be traced back to the Classical world. The definition that concerns us here, and that has its Western origins in 15th century Italy, is under the sub-heading "*(b): im engeren sinne das gleichmäszige verhältnis zweier (oder mehrerer) gegenstände in bezug auf ein in ihrer mitte liegendes objekt, auf einen mittelpunkt, eine mittellinie, zu der sie in entgegengesetzten richtungen gleichartig hingeordnet liegen, vgl. 'symmetrie ... die Frantzosen brauchen es (das wort) auch vor die ähnlichkeit der seiten neben einem unähnlichen mittel, wovon unter dem wort eurythmia geredet worden' CHR. WOLFF mathem. lex. (1716) 1343; sowohl von der gleichmäszigen anordnung der teile eines kunstwerkes, schöpfungen der natur (z. b. kristallen, blättern, blüten, animalischen körpern), wie auch in der geometrie, Wie nennen wir diese wahlordnung einer mitte zu ihren beiden seiten? symmetrie. wir suchen sie bei jeder breite und finden sie mit vergnügen, die ganze eurythmie der baukunst ist auf sie gebauet HERDER 22, 47 S.; wie er (der mensch) dasteht in seinem hohen eins! — wohlgestalt, ebenmasz, symmetrien durch alle formen und glieder LAVATER physiogn. fragm. (1775) 1, 5; jedes wohlgebildete gesicht wird entstellt, wenn man die nase auf die seite biegt, und warum? weil die symmetrie gestört wird, auf welcher die gute bildung des menschen beruht GÖTHE 45, 259 W.; die symmetrie des bauches (einer geige)".* In der 2. Fassung S. 22 oben und in der zugehörigen Fußnote 11 wird auf den symmetrischen Geigenkorpus verwiesen als Beleg für Goethes konventionelles Wortverständnis, oder irre ich? Wenn wir richtig liegen: Der Beleg mit der schiefen Nase WA I 45,259 passt, der Geigenbeleg - so schön wie er ist - ist aber von Schubart! Kann es sein, daß Sie beim Exzerpieren aus DWB einfach die Quelle vergessen haben? Ich hoffe, Sie verstehen meine kleine Nörgelei nicht falsch.

It is worth pointing out that the Grimms – perhaps out of kindness - did not cite Goethe's formulation from *Aus einer Reise …* (see fn. 13,

sometimes, this is how Goethe, too, understood the word, if only because one of the Grimms' citations in their entry for "Symmetrie" with this meaning is Goethe's reference to the symmetry of the "stomach" of a violin (*die symmetrie des bauches [einer geige]*).[11]

Goethe's principal discussion of the concept of symmetry and its relation to Byzantine aesthetics is in the "Heidelberg" section of his *Aus einer Reise am Rhein, Main und Neckar.* It is baffling that he did not base his remarks in this work on the definition of symmetry - as the mirroring of the two lateral halves of a form - that was standard in his day. But why he replaced it with a definition, concocted by himself, that is not only *sui generis* but so flawed as to be completely useless, if not actually *laughable,* is a far greater mystery.

In *Aus einer Reise…* Goethe seems to be thinking of symmetry in terms of the visual arts, and perhaps specifically in terms of paintings (and possibly mosaics) alone; and it is with a statement about the visual arts that he opened his discussion of symmetry. Their "highest task" – no less! – he said, is to decorate ("*verzieren*") a space that is already defined, or to place decorations in a space that is still undefined ("*unbestimmt*").[12] Lest there be any doubt about his meaning, he emphasized that "Everything that we call a work of art stems

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below) in their entry for "Symmetrie". Neither does Gombrich, 1987. But it will evidently be included in the forthcoming *Das Goethe Woerterbuch*.

[11] I see from a draft of the entry for "Symmetrie" in *Das Goethe Woerterbuch*, that in fact Goethe generally used the term in more or less conventional senses, but often without getting it *quite* correct. Thus, in 1830, he defined it as "mostly being used for parts which stand against each other and relate to one center", ("*meistens wird das Wort von regelmäßig gegen einander über stehenden, auf eine Mitte sich beziehenden Theilen gebraucht*") – which misses the necessary element that the forms of those parts must mirror each other. For other idiosyncratic uses of the term by Goethe see pp.25-27, *below.*

[12] Is this a distinction without a difference?

from [the fulfilling of] this requirement (*aus dieser Forderung*)…"

But in fact *not quite* "everything", for there is in Goethe's construct another - and in Goethe's formulation, only slightly less ambiguous - requirement that a composition must meet if it is to be considered a work of art. We have already seen that in Goethe's view symmetry is one of the basic necessities of art. It is not sufficient, therefore, for a composition to have "decorated" a space – whether "defined" or "undefined". The composition *must also be symmetric.*

For that to be achieved, Goethe declared, the various parts of the composiiton must relate to each other in a specific way that he called "reciprocal" (*sich wechselweise aufeinander beziehen*). This happens when the composition has "a middle, an above and a below, a here and a there (*ein Hüben und Drüben*)". Where this requirement is met, symmetry comes into being (*entsteht*) and thereby enables the composition to meet one of the basic "rules of art".[13]

But that, too, is not the whole story. There are gradations of symmetry, with the lower grades being qualitatively inferior to those above them. In the lowest of these grades, the "reciprocal relationship" of the parts is "wholly comprehensible and immediately recognizable" and – perhaps worst of all to someone with Goethe's romantic sensibilities - it can be "grasped by reason"! This is the symmetry that he

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[13] Goethe 1963, p.95; Gage, p.134. You can't make this stuff up! Here is Goethe's German text: "… *Die hoechste Aufgabe der bildenden Kunst ist, einen bestimmten Raum zu verzieren oder eine Zierde in einen unbestimmten Raum zu setzen; aus deiser Forderung entspringt alles, was wir kunstgerechte Komposition* heissen … *Alles was wier uns daher als Zierde ansprechen soll, muss gegliedert sein and zwar im hoehern Sinne, dass es aus Teilen bestehe, die sich wechselweise aufeinander beziehen. Hiezu wird erfordert, dass es eine Mitte habe, ein Oben und Unten, ein Hüben und Drüben,* woraus zuerst Symmetrie entsteht, *welche, wenn sie dem Verstande voellig fasslich bleibt, die Zierde auf der geringsten Stufe genannt werden kann."* (My emphasis.)

declared "always" characterized the work of the Byzantines, and which the Byzantines introduced to the whole of Christendom. What distinguishes the higher grades of symmetry is the progressively greater number and complexity of their design elements, which make their symmetry increasingly difficult to detect. Thus, what Goethe called the "early symmetry" of the Byzantines, gave way to symmetry that is sometimes visible to us as a kind of "spiritual symmetry" or as a "visible mystery", but that for the most part is not visible but "concealed"; we are unaware of it, so that we regard the relationship of the parts of a composition with "astonishment" and – erroneously - as "a product of chance and caprice". Elsewhere, Goethe says of "the idea of symmetrical composition" that it was a form of "technical perfection" that had been "preserved unnoticed". The very invisibility of a composition's symmetry attests to it being the highest form of symmetry!

Goethe's formula for symmetry had nothing to recommend it – we can confidently say that it is nonsense! It seems that he may have recognized as much, himself, for in none of his discussions of specific works of Byzantine or indeed any other works of art do we find him invoking his formula of a "middle … and a here and a there". When he wanted to discuss the presence of symmetry in two paintings that he admired, he resorted instead to something that – vaguely, to be sure, and very ineptly - evokes the conventional concept of symmetry as the mirroring of the two lateral halves of a form.

One of these paintings is the *Dombild* (*fig*. 2, page 26). Of its figures, Goethe writes that they "face toward the center, symmetrically … [so that] the usual Byzantine precept is still the rule".

"Facing the center" is not a necessary, let alone a sufficient, attribute of symmetry, and Goethe's reference to an

alleged – but in fact non-existent – "usual Byzantine precept" does nothing to strengthen his case. Nor does the actual composition of the *Dombild*, uphold Goethe's description of it, for only some of its figures face what Goethe implies is the center (but which in fact is well to the left of the painting's center), while others look in a variety of directions. Any more or less conventional understanding of symmetry, moreover, while it would not require all the figures in this painting to face the center, *would* require that their number, appearance, posture and relative position be the same on either side of

fig. 2: Stephan Lochner (c1410-1450) *Dombild* (center panel)

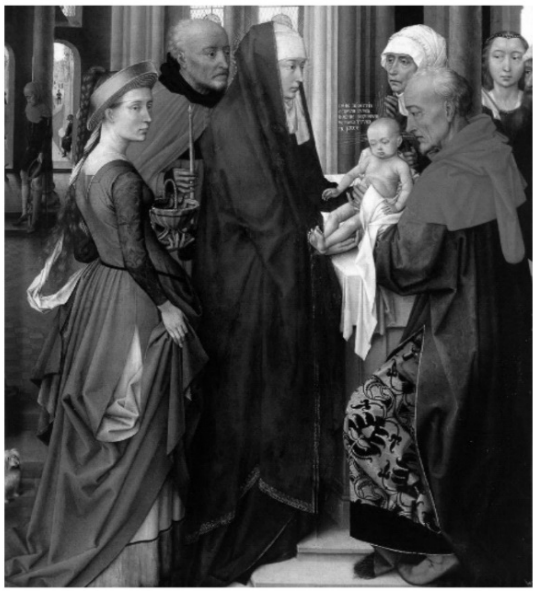

fig. 3: Rogier van der Weyden (c.1400-1464)
Colomba Altarpiece (detail)

the center: which they obviously are *not* in the *Dombild.* And that is just as well, for it is precisely the unpredictable, erratic, arrangement of its figures – their boldly asymmetric arrangement – that gives this painting its measure of liveliness.

Goethe's "middle … and a here and a there" also does not put in an appearance in his analysis of the symmetry of another painting that he admired - Rogier van der Weyden's *Presentation in the Temple,* (*fig.*3, page 26), a panel of the Saint Columba altarpiece which in Goethe's day was mistakenly attributed to Jan Van Eyck.

Goethe chided the artist for his composition's lack of "a central accent", which he said prevents the painting from living up to "the most perfect standard of art"' He added, however, that the "opposition of the figures" creates "a sort of parallelism", which he called "a spiritual symmetry". What does that term mean? From the context, we can infer only that it is an arrangement in which some figures are juxtaposed to each other but without a visible axis to mark the line between them. But what is "spiritual" about that? (Moreover, does not the fluted column behind the two women facing each other function as just such an axis?) I do not know if we can clarify Goethe's "spiritual symmetry" further. Nor do I know whether we would gain much if we were to succeed in doing so.

Conclusion We have covered a lot of ground in this short chapter, and it may be helpful to summarize what we have obtained from Goethe's views on symmetry, on art, and on the transmission of the concept of symmetry to the Latin West. We need not be bashful about this: Goethe's views on these topics are defective through and through.

We can take them point by point.

Goethe's notion that the task of art is to decorate a space is bizarre. Surely, art is much more than merely the decorative filling of a space! And surely, not every decorative filling of a space is art!

Just as bizarre is Goethe's demand that the space thus filled by art must consist of "a middle, a top and a bottom, a here and a there". These, of course, for all that Goethe presented them as prerequisites of symmetry, do not distinguish a symmetric space from an asymmetric one. They can be applied (in the improbable event that they were ever thought worth applying) to any shape at all, whether symmetric or not.

Goethe evidently based his insistence that a work of art must be shaped symmetrically on his view that "no visualized thing can be attractive without symmetry". That view is indefensible, for most things that we find attractive are asymmetric. Almost none, and perhaps even *none*, of Nature's forms (to single them out) have symmetric shapes: not clouds, not trees, not snowflakes, not mountains - I could go on – but who would deny that they are among the sources (and are possibly the foremost source) from which we derive our ideas about what is "attractive"? [14]

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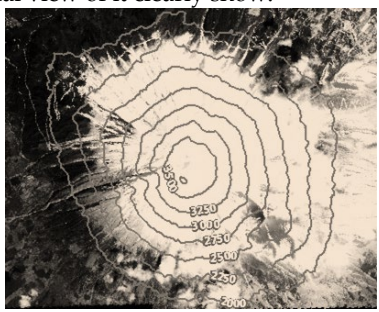
[14] Though it is sometimes described as symmetric, Mt Fuji, one of the most "attractive" of mountains, is asymmetric, as the topographic lines superimposed on an aerial view of it clearly show:



Source: i1.wp.com/gisgeography.com/wp-content/uploads/2016/12/Fuji-Mountain-Contour-2D-Label-3.png

Nowhere in his elucidation of the concept of symmetry does Goethe acknowledge, let alone explain, his departure from the conventional understanding of what symmetry is.

Nowhere does Goethe document – he merely asserts - his claim that Byzantine art is "always" symmetric. (In fact, he does not demonstrate that it is *ever* symmetric: not even in in terms of his own view of symmetry.) Similarly, he asserts but provides no evidence that it was Byzantine artists and craftsmen who introduced the concept of symmetry to the West.

Most extraordinary, perhaps, is Goethe's notion that the highest form of symmetry is one that we cannot discern. How can we know that a work of art is symmetric if we cannot see its symmetry?[15]

Goethe was a very great playwright and poet. He made notable contributions to the natural sciences. But his views on Byzantine art and on symmetry have nothing to tell us.

[15] The notion of "hidden symmetry" would re-surface about a hundred years later in the claim by psychologist E.D. Puffer, *The Psychology of Beauty* (1905), p.10, that we find asymmetric designs attractive only when a symmetric design is "hidden" in them. Professor Puffer did not indicate, unfortunately, how we know that this hidden design is there: how we are to detect it. Must we perhaps infer its invisible presence if we are attracted to an asymmetric design? Are we to deduce that a symmetric cloud is hidden within an asymmetric one? Or that Corbusier embedded an invisible symmetric structure in the walls of his chapel at Ronchamp?

Chapter Three. Byzantine Descriptions

Byzantine Symmetry? In Byzantine Greek the word "symmetry" occurs with meanings that are uncertain and (it would appear), quite different from one another, and we cannot merely assume that any of them are to be understood as what we are calling the concept – or even just the idea – of symmetry. In this chapter we will see what can be learned from instances of the term's appearances in in aesthetic contexts. It is a brief chapter, for these instances are few and far between – "symmetry" in its various forms was not a term much used by Byzantines. Literary sources, therefore, few in number and uncertain of meaning as they are, are likely to be of little help to us in understanding what role – if, indeed, *any* role - the concept of symmetry, or even just the idea of it, played in Byzantine aesthetics. As I have already mentioned, however, the barrenness of these sources does not limit our inquiry, for beyond them, we have the visual works of Byzantium's wondrously rich, long-lived and far-flung civilization. Attempting to explicate the aesthetic concepts that shaped these works is, to be sure, a hazardous strategy, and the results to which it leads are more likely to be tenuous, or contentious, than persuasive. But there is no realistic alternative to it, and it is the one that, *faute de mieux*, we will pursue in the chapters that follow this one.[1]

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[1] One mention of symmetry that surely has no bearing on Byzantine aesthetics or even on anything *visual* is in an arcane alchemical text of Stephanus of Alexandria (d. *circa* 640): "*ναι συμμετρική (ανάλογη) η έννοια του όλου, για να αποκαλύψει (ανακαλύψει) τον διαχωρισμό (την διάλυση) που μπορεί να μεταβληθεί (να αλλάξει, να μετατραπεί)*"– which means something like: "…and twice eight because it seeks the meaning of the whole to be *symmetrical to reveal the separation that can be …*"

Choricius and the Church of St Sergius at Gaza: In the late 5th or early 6th century Choricius, a rhetorician, wrote a description of the church of St Sergius in his native town of Gaza. In one passage he described two rows of four columns, "which display a uniform harmony both in themselves and in their relation to each other". These are joined by arches that support the center of the church:

> There being eight arches, each pair encloses within itself a concave roof [?barrel vault?] which is extremely well decorated. You might say that, even in architectural matters, the bishop is a guardian of equity, for nothing here outdoes its opposite, all the elements face each other in equal and symmetrical form *(συμμέτρον)*…[2]

The church of St Sergius at Gaza no longer exists and so we cannot corroborate Choricius' description. Moreover, "the style of Choricius is indeed often overly ornate and hard to follow".[3] Nevertheless, we can perhaps be somewhat confident that the structure he described in this excerpt – with its columns "equal" in form and "opposite" each other, and with none "outdoing" (?differing from?) its opposite – is one that that we too might well have regarded as symmetric. Choricius' description, then, for all its minor ambiguities, allows us a basis from which to infer what he meant by "symmetry", and to recognize its closeness to our understanding of the term. Noteworthy, too, is that Choricius evidently assumed that his readers would just as well understand what he meant by "symmetry" as by the other words he used to describe the structure. Evidently, it was not an obscure or arcane term.

It should also be noted that, for all his appreciation of the symmetry of the arches at the center of St Sergius, in Choricius' opinion, it was not their symmetry but the church's

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[2] Choricius, *Laudatio Marciani* I, 17ff., trans. Mango 1972, pp.61-62.
[3] Maguire, 1978.

proportions that were (as he put it) its "first and greatest glory".[4]

Michael Psellos' *Chronographia*: Psellos – the eleventh-century "Chief of the Philosophers", as he was officially styled – has several references to symmetry in his *Chronographia.* One of these is not about a building but about the physical appearance of the emperor Constantine IX (1042-1055):

> It was a marvel of beauty that Nature brought into being in the person of this man, so justly proportioned, so harmoniously fashioned, that there was no one in our time to compare with him. To this symmetry she added…[5]

The use of "symmetry" to refer to fine proportions and harmonious forms is an ancient one and indeed even persists to this day.[6] It is quite clear, I think, that Psellos is using the term in this sense here.

He uses the term four times in the context of architecture. Of an unidentified church built by the emperor Romanus III (1028-1034):

> The symmetry of walls, the encircling columns, the hanging tapestries, the magnificent offerings, and the other things of like splendor …[7]

The symmetry of the walls is one of several things whose "splendor" is *like* that of the columns, the magnificent offerings, etc. It probably refers to the beauty of the walls' proportions, for there is nothing inherently "splendid" in

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[4] Mango, *op.cit.*, p.69.

[5] *Chronographia* Bk. VI, 125. Cf. *Alexiad* III,3, where Irene's features are described as "perfectly symmetrical,each being broad or narrow in due proportion".

[6] Cf. for example, Athanasios of Alexandria (d.373): "the universe is not characterized by disorder but by order (τάξις), not by disproportion but by symmetry" – quoted *Ox,Dict.Byz.* article on symmetry.

[7] *ibid*, Bk.III, 15.

walls that are symmetric in the modern sense.

The emperor Michael IV (1034-1041) enlarged and embellished the church of the Anargyroi (Cosmas and Damian):

> The depths and heights of this edifice were given a new symmetry…[8]

The mention of the church's "depths and heights" indicates that "symmetry" in this passage refers to the structure's proportions.

Constantine IX (1042-1055) demolished the original church of St George of Mangana, and then tore down, as insufficiently grand, the structure intended to replace it. Among the features torn down now was "the symmetrical arrangement of the earlier stones".[9] When the new structure was completed to Constantine's satisfaction,

> People marveled at the size of the church, its beautiful symmetry, the harmony of its parts, the variety and rhythm of its loveliness, the streams of water…[10]

There is no implication that the symmetrical arrangement of the stones in the first of these passages was a beautiful or pleasing one, nor that their arrangement was harmoniously or finely proportioned. For these reasons, and while acknowledging that the passage *is* obscure, it seems possible that Psellos may have intended "symmetry" here to be understood in the modern sense of two halves mirroring each other. Everything in the second passage, on the other hand, is pleasing to look at, and the structure's symmetry is "beautiful". Almost certainly, Psellos here has the church's *proportions* in mind.

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[8] *ibid*, Bk. IV, 31.
[9] *ibid*, Bk.VI, 186.
[10] *ibid*, Bk.VI, 187.

Mesarites and the Church of the Holy Apostles in Constantinople: Nicolas Mesarites, who lived in the late 12th and early 13th centuries, was a writer and church functionary from an aristocratic family who rose to be Metropolitan of Ephesus. He wrote a lengthy description of the Church of the Holy Apostles, which Justinian rebuilt to serve, among other things, as his sepulcher; the original church, erected by Constantine, had been destroyed in an earthquake. Its many great treasures were looted by soldiers of the Fourth Crusade in 1204. In due course the church fell into decay and in 1461 was torn down by Mehmet II, the conqueror of Constantinople, who built a mosque on its site. In his description of the Church of the Holy Apostles, Mesarites mentions three string-courses on the structure:

> For strength and beauty, the whole church is bound around by three girdles, as one might say, woven of stone and placed at symmetric *(συμμέτρον)* intervals from each other, which it is the custom of those who are learned in those matters connected with buildings to call string-courses.[11]

Mesarites' "symmetry" in this passage does not suggest any mirroring of forms across an actual or nominal divide. One of the numerous Classical meanings of "symmetry" that we find in the Liddell and Scott *Lexicon* is "of like measure", and this is surely the meaning that Mesarites must have had in mind in this passage. His description of the intervals between the "girdles" as symmetric thus indicates that the string-courses are separated from one another by an equal distance. That Choricius (in the previous passage) and Mesarites were using "symmetry" in different senses can be confirmed by noting that, for the former, the word qualifies the relationship between certain elements in terms of both

[11] Downey 1957, sect. XXXVII.

their form and relative spacing; while for the latter, it specifically qualifies *the distance* separating them without indicating whether their *appearance* is identical.

(Mesarites' string courses give the building beauty as well as strength, but we cannot infer from his description that it was their equal spacing that made them beautiful.)

Conclusion: In the passages reviewed in this chapter, we have seen "symmetry" used in quite different ways, including, in one instance, perhaps for shapes and arrangements that mirror each other. While Choricius' use of the term can be inferred from the context, the fact that he did not explain it implies confidence that readers would understand his meaning. Choricius was clearly pleased by the symmetry he noted in the church, but he did not deprecate what we can assume is the absence of symmetry in other portions of the church. As we saw, it was not its symmetry that he considered the church's "first and greatest glory". Clearly, Choricius did not think that only symmetric forms can be beautiful.

The fact that his is the only such comment known from Byzantine times should not lead us to minimize its significance. It is literary evidence – scant though it be - that about a thousand years before the concept of symmetry came to be known in the West, there was at least some inkling of it in Byzantium.

In the next chapter we will analyze a further piece of literary evidence that symmetry was known to the Byzantines.

Chapter Four.
The Paros Church: "wholly symmetric"?

Nicetas and the Church of the All-Holy Lady of the Hundred Gates in Paros: In the year 911 a Byzantine official by the name of Nicetas Magister stopped off in Paros on his way to Crete and, while on the island, visited its church of the All-Holy Lady of the Hundred Gates (*Panagia Hekatontapiliani)*.[1] The church was then already more than three hundred years old, and Nicetas thought that it was a real feast for the eyes and well worth the seeing, "because (*διότι)* it was built wholly (*ολόκληρος)* symmetric".[2]

It is these words, of course, that attract our attention here. We should make a particular point of noting that Nicetas not only described the church's construction as *wholly* symmetric, but specified that it was *because of* its symmetry that he admired it so greatly.

(Nicetas also mentioned admiringly that the church "was supported all around by numerous columns of imperial

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[1] *Παναγία Εκατονταπυλιανή*'. By "the church" – or alternatively "the *Panagia*" - I mean the complex of connected structures that includes the Great Church, the Old Church, the Baptistery, and ancillary chapels, diaconicons, narthices, etc.. The walled compound that contains the church also encloses living quarters that flank three sides of the courtyard facing the West façade of the Great Church, as well as a burial ground. Jewell and Hasluck (1920, p.62), place the construction of the Old Church, the Great Church, and the Baptistery in a period extending from not long before to not long after the reign of Justinian (CE 527-565). Orlandos (1965) thought they were built on the plan of a 4th century - Constantinian - structure that had been destroyed by an earthquake.

[2] Nicetas Magister (1925), Nov.IV, p.226, trans. Mango 1972, p.104. In what follows, I will abbreviate Nicetas' "feast for the eyes … well worth seeing" to, simply, "beautiful". On Nicetas, see Westerink 1973, pp.23-38; and Jazdzewska, 2009.

stone" [*βασιλικου λίθου* – probably, porphyry], and that "all" its walls were reveted with thin sheets of the same stone. These had been so delicately finished, he added, that the walls "seemed to be clothed with purple fabric, while the glitter of the stone exhibited such liquid refulgence as to surpass the brilliance of pearls".)

Orlandos' "restoration" In the years between 1959 and 1965 a massive "restoration" of the Paros church complex was carried out under the supervision of a Greek official called Anastasios Orlandos. Nicetas' description of the *Panagia,* although brief, is by far the earliest we have,[3] and so one might suppose that Orlandos had viewed it as a valuable resource. Bafflingly, however, he seems instead to have ignored it entirely. No reference to it appears in any of Orlandos' numerous publications,[4] and there is nothing to suggest that it guided any of his work on the church complex.

Nicetas tells us that the church was "built wholly symmetric" but he left not so much as the slightest hint about what he meant by the term. As we have seen, "symmetry" has had a wide range of meanings. This, along with the fact that there are very few recorded uses - in any sense at all - of the word in Byzantine Greek, means that we cannot simply *assume* that we know what Nicetas had had in mind.

We should note that the church is the only structure still standing today, *mutatis mutandis,* which we know was described during the Byzantine era as symmetrically built.[5]

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[3] The next reference is in the 15th century, when it is mentioned merely as "a temple of marble, still intact": see Jewell and Hasluck, p.4.

[4] See entries under Orlandos' name in "Works cited or consulted", *below.*

[5] Readers are invited to disregard a statement in the *Oxford Dictionary of Byzantium* (article entitled "Symmetry in Art") that "For Paul Silentiarios and Agathias the symmetry of Hagia Sophia was an essential part of the architects' achievement". No sources are given for this bold assertion, and I am confident that neither Paul nor Agathias ever made any such statement. (But cf. Mathew 1963, pp.91-93). Indeed, far from applauding the

As such, it could offer a unique opportunity to match the term to the structure it described. If we find that the Paros *Panagia is* indeed a symmetric structure, in our understanding of the word, we will know – far more certainly than we can learn from ambiguous literary sources - that at least one meaning of "symmetry" for the Byzantines was the same as the principal one that we know today. (Though of course we would still be a long way from vindicating the claims of Goethe and modern scholars about the dominant place of symmetry in Byzantine aesthetics.)[6]

But this is not a simple task, by any means, for the church that we see today differs in many small and large ways from the one that Nicetas visited more than eleven hundred years ago.[7] Orlandos' "interventions" (as he sometimes called them) have not made this task any easier.

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alleged symmetry of Hagia Sophia (which is in fact *not* a symmetric structure: see pp. 76-102, *below*), Agathias is the only Byzantine on record as having deplored asymmetry (our term, of course, not his) in Hagia Sophia – see pp. 125-127, *below*. Nor is there a record from the Byzantine era of any other building being criticized for (what we nowadays would call) its asymmetry.

[6] I have mentioned that "symmetry" is a term that occurs very infrequently in Byzantine writings about art or architecture. It would be wrong, I believe, to infer from this fact alone – *ex silentio* - that the Byzantines were unaware of – or else, did not esteem - the concept of symmetry, or did not make their artifacts symmetric. Nowadays, most of the things we make or construct (certainly, most buildings) are symmetric, but we very rarely refer to their symmetry. That is seldom the first, nor the most significant, thing that we notice about an object. Until we have reason to think otherwise, we must assume that this *could* have held true of the Byzantines, too.

[7] Even its name has undergone an evolution. Records from the 17th and 18th century identify the church as *Katapoliani* – the adjectival form of the place name *Katapola*. A plausible suggestion is that the church may have been named *kato* (below) *polis* (town), for its situation on lower ground than the village it adjoins. To these variants, the *Panagia* by which the church was called in Nicetas' day, would have been added: see Jewell and Hasluck, 1920, p.3, and fn.2.

Orlandos was a bitter and outspoken critic of Nikolaos Balanos, the engineer who spent much of his life "restoring" structures on the Athenian acropolis – most notably, of course, the Parthenon.[8] Balanos' poor judgement led to some tragic outcomes, the most distressing of which was the irreparable damage done to a number of the Parthenon's stones by the rusting of iron reinforcements that Balanos inserted into them. But what seems to have incensed Orlandos in particular was Balanos' falsification of parts of the Parthenon's fabric by, for instance, putting dislodged fragments into parts of the structure where they had not been originally, or by replacing missing stones with pieces made up from a hard limestone core covered with artificially-colored mortar. In disputing Balanos' decisions, Orlandos argued that work on an ancient monument should be limited to the minimum required "to render its volumes more comprehensible and to secure its conservation".[9] But as the years wore on Orlandos, now in charge of all Greek monuments other than those on the Acropolis, moved from this conservative position to the "purist" doctrine (as it was called) that aimed at restoring monuments to their original form.

This was regrettable for two reasons. An ancient building is not what it was when it was first built but what it has become ever since. Its experiences are etched into its stones, and they are not only a part of the building's history but of its present physical reality, as well, so that its authentic identity cannot be recognized if the material evidences of its history over the long course of its life are expunged.

To take one example: an inscription records that the belfries on the west front of the *Panagia* were installed in 1718. They had stood there for close to 250 years before Orlandos demolished them. Were those years – a quarter of a

[8] Balanos, 1938.

[9] Dimacopoulos, 1985.

millennium – not part of the church's history? Had not the gift of them enriched the community? Had not their chimes been part of the lives of generations of islanders? In removing the belfries, Orlandos was not clearing barnacles from a sunken hull; he was destroying part of the church's life. Face-lifting is a travesty, whether performed on a building or on a human being.[10]

The second, and more pragmatic, objection to the purist ambition is that it presupposes that we can discover what an ancient building's original appearance was. But that is something that we can rarely know in general terms, and almost never – perhaps indeed, never – in the kind of detail that would make a legitimate "restoration" possible. The point is self-evident, surely: yet it seems not to have troubled Orlandos one whit, and to have eluded a certain Jordan Dimakopoulos[11], who claimed that Orlandos had removed "all successive additions" to the church and restored it to "its sixth-century state".[12]

In fact, aspects of Orlandos' "restoration" of the *Panagia Hekatontapiliani* suggest that his work was not carried out as conscientiously as one might have assumed. His response to the problem posed by Nicetas' "built symmetrically", for example, was to ignore it.

The porphyry columns and revetments that had

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[10] See Addenda and Corrigenda 1, p.vi, *above*: "Article 11 of the Venice Charter for the Conservation and Restoration of Monuments…", which might almost have been written with Orlandos' depredations in mind.

[11] He is described online as a "monument conservationist" and author of *Scripta Minora Architectural Investigations and Monument Conservation Projects*, 2005.

[12] Dimakopoulos (1985). He evidently did not feel that these claims were inconsistent with information he provided that Orlandos had used large quantities of modern steel-reinforced concrete to reconstruct a number of the church's vaults, which he then overlaid with "new-cut stones coloured to imitate the original vaults' inner surfaces" – shades of Balanos!

impressed Nicetas so favorably are not to be seen in the church today, and Orlandos had nothing to say about them, either: certainly, he did not install replacements of them as part of his "restoration". Questions can be raised, too, about Orlandos' attention to detail. For example: in a curiously oblique statement, he declared that his workers had uncovered two buttresses (*fig.* 4, page 42) on the west façade of the church.[13]

However, the buttress to the right (facing the structure) was deeper than the stone of the façade wall that Orlandos removed, and had been visible well before he began his undertaking; it is shown in the survey, carried out by Jewell and Hasluck in 1910 – see *fig.* 5, page 42. (The shallower buttress on the left had been concealed in that wall.) Orlandos reported that the buttresses were placed symmetrically on either side of the façade's tribelon. His own plan, however, shows that the buttress ("A") on the right is further from the tribelon than the other buttress ("A") and that it is, moreover, significantly wider and (as already noted) deeper. Ironically, this inaccurate reference is Orlandos' sole mention of symmetry in connection with any part of the *Panagia* complex.

A close look at one of Orlandos' "interventions" will show just how radical some of the changes he wrought on the *Panagia* were. *Figs.* 5 and 6 (pages 42, 44) give a "before and after" view of his restoration of the principal façade of the church – its West front. The first illustration reproduces a portion of the surveyed drawing of it executed by Jewell and Hasluck in 1910 (about which more, presently).

We see there a somewhat nondescript three-storey structure with three portals on the ground floor, three windows above them on the upper floor, and what appears

[13] Orlandos 1965, *fig.* 10.

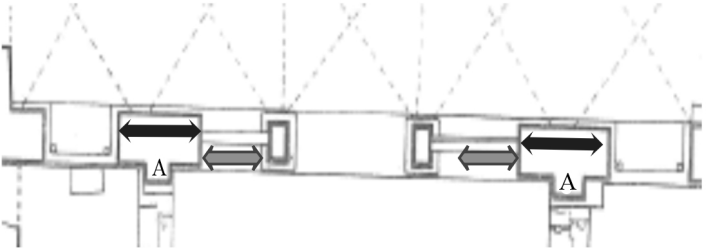

*fig.*4: the buttresses ("A") on the West front of the *Panagia Hekatontapiliani* (from Orlando, 1965)

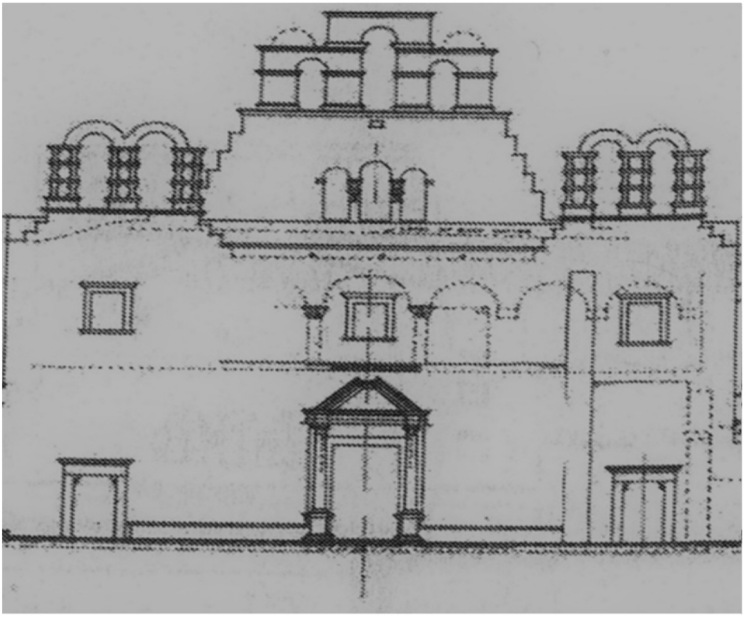

fig. 5: *Panagia Hekatontapiliani* in 1910: West front (after Jewell and Hasluck). Note the buttress close to the door and window on the right.)

to be a row of three smaller, almost contiguous, windows in the large, stepped, gable above it. Belfries surmount this gable and the smaller ones that flank it. I give a detailed analysis of this structure on pages 52-54.

Fig. 6 (page 44) shows what this structure looks like since it was "restored" in the 1960's under the direction of Orlandos. It is practically unrecognizable.The center gable and the side gables, with their belfries, are as though they had never been. The variegated roof line has been replaced by a much lower line that stretches unbroken and unvaried from the north to the south corner of the structure.

On the second level, the flanking windows are now arched, are deeply set into the walls, and reach down to only about half of their respective recesses, the rest of which are filled with a panel on the same plane as the glass itself. The window on the right is closer to the center of the overall structure than the window on the left; and the entire right-hand setback of the façade is also substantially narrower than that on the left. The rectangular window near the middle of the upper level of the older façade has been replaced with an arcade of three windows, which also do not reach down to the bottom of the recesses in which they are set. The trio is not centered in the wall – it is further to the left, perhaps in order to be centered on the arcade below it. Like the arch directly beneath it and the window directly above it, the window on the right of this trio is also lower (but not narrower) than its opposite number on the left.

The biggest changes in the façade's appearance are in the lower portion of the center section. The wall that had earlier been pierced by a single portal has largely been replaced by a tribelon, whose three arches differ in height and width from one another. If the door behind it that leads

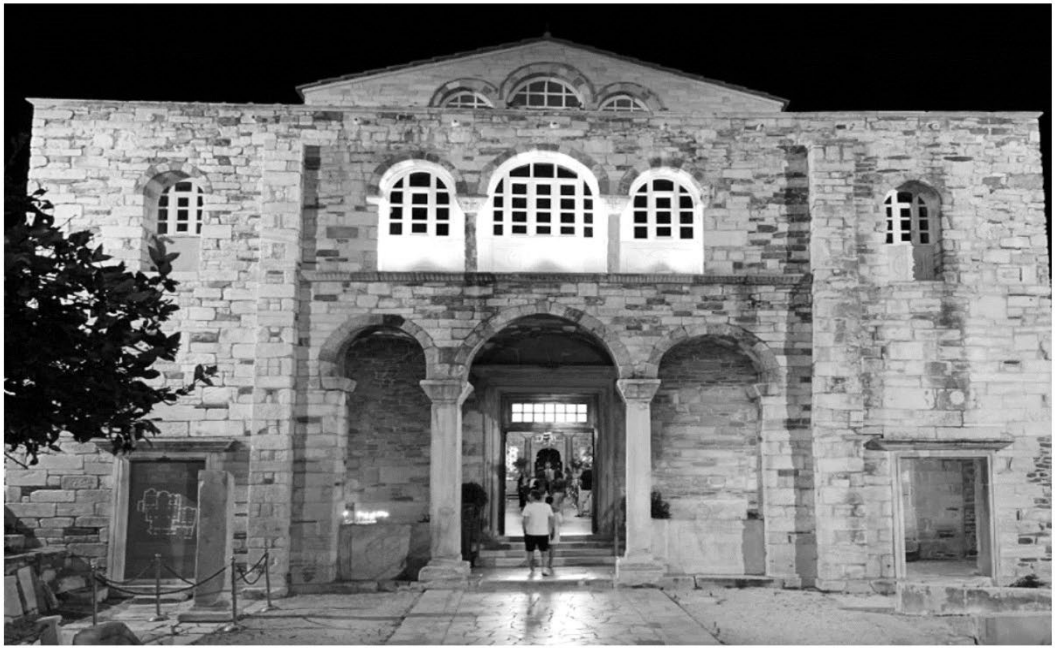

fig. 6: *Panagia Hekatontapiliani,* the West front
after the “restoration” by Balanos

into the church is centered on the nave, then it is evident that the arcade itself is off-center. Nothing that we see in this "restoration' looks, or *feels,* like a 6th-century structure. Its windows, for instance, look as if they could have been purchased just the other day from a building-supply store; we cannot imagine that they were painstakingly and happily fabricated in a 6th century glazier's *atelier.* All in all, not even the most determined suspension of disbelief will persuade us that this is a fifteen-hundred-year-old building and not a modern one - or that it is not a cousin to the Stoa of Attalos and similar travesties. The Greek architectural historian and conservationist Sotiris Voyadjis has published a careful review of Orlandos' work on the *Panagia Hekatontapiliani*.[14] In the English summary of his article (but, perhaps tellingly, not in the Greek text itself) he wrote that Orlandos' "interventions on the complex … would *completely* change its form". One cannot quarrel with this lamentable conclusion. What Orlandos accomplished is more fabrication than restoration. The historical record that was embedded in the church's structure has been obliterated and cannot be recovered; and little if anything is left in the *Panagia* that can show us what Nicetas Magister nay have had in mind when he wrote that it was "built symmetrically".

Jewell and Hasluck's Survey In 1910, however, a detailed study of the structure and structural history of the *Panagia* complex was conducted by Harry Jewell and Frederick Hasluck under the auspices of the British School at Athens; its findings were published in 1920 by the School's Byzantine Research and Publication Fund.[15] The authors quote Nicetas' remark about the church being (in their translation) "built symmetrically", but unfortunately and surprisingly have

[14] Voyadjis, 2019.
[15] Jewell and Hasluck, 1920.

nothing to say about it. We must therefore look to the details of their survey of the church to see whether it can help us to discover what Nicetas' "built wholly symmetric" means.

Jewell and Hasluck record in some detail the damage that the *Panagia* suffered over the centuries as a result of wars and earthquakes, and of course, from the wear and tear of time, too. They also also record many of the repairs that had to be done to the church, as well as other alterations. Among changes to the Small Church, they note the reconstruction of the dome and parts of the upper vaulting; and the apparent repositioning of the north- and south-west piers of the dome. These now rest on the wall carried by the nave arcading, but they are not set centrally (and are distributed randomly) over the arcade columns.

In the Great Church, the original dome, which had collapsed, was replaced by a conical structure; other major repairs include the replacement of the original nave vault, which also had fallen, by one that now rests on piers and arches built against (but independent of) the original structure of the church; the rebuilding of the vault over the north transept, the external north wall of which was reinforced by a thick sloping buttress that runs its entire length and extends to much of the outer wall of the north aisle, too; and the reinforcement of the exterior of the apse by a thick retaining wall and four buttresses. Inside both churches, pillars were encased in concrete or stone to strengthen them, as were the piers at the crossing in the Great Church. Also, many windows and doors were fully or partly blocked, presumably to strengthen the walls through which they passed. Clearly, even before Orlandos made his "interventions", the *Panagia* had long since come to differ, perhaps considerably, from what it had looked like when Nicetas Magister visited it

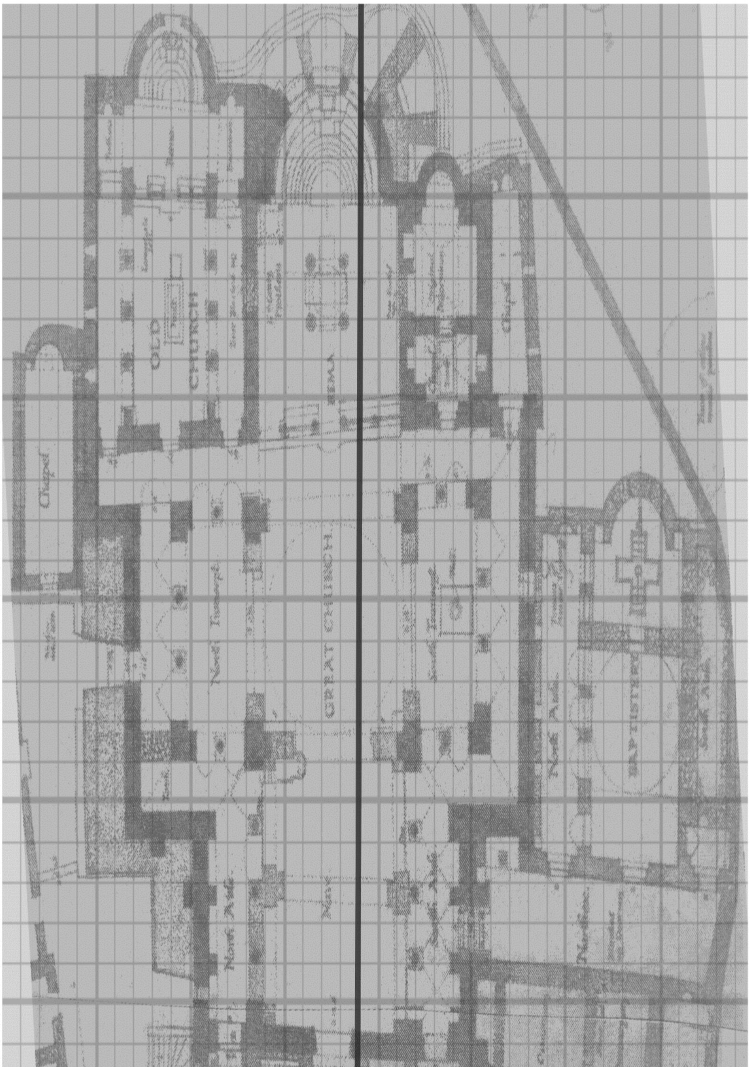

fig 7: *Panagia Hekatontapiliani*, the church complex
after Jewell and Hasluck

in the beginning of the tenth century. [16]

When Jewell and Hasluck surveyed the church in 1910, its main façade – the West front – was clearly asymmetric. Orlandos completely changed its design but, if anything, made its asymmetry even more pronounced. Asymmetric arrangements are present, indeed, throughout the church complex. I have superimposed a vertical line on the (approximate) center of Jewell and Hasluck's plan of the overall complex (*fig*. 7, page 47). A moment is all it takes to see that what is on the left of that line is not in any way the mirror image or the replica of what is on the other side of it. Even allowing for possible inaccuracies in the survey by Jewell and Hasluck, and for the somewhat crude execution of their plates, there can be no reason to doubt that the *Panagia,* as surveyed in 1910, was a topsy turvy *and asymmetric* agglomeration of structures. The question for us however is to determine whether these pervasive asymmetries were *later* modifications (whether by human design or by force of Nature) of original symmetric arrangements – or whether they are original to the structure. This is the task to which we turn now. We will carry it out by examining in turn each of the principal components of the *Panagia* complex, for the most part as they were recorded by Jewell and Hasluck. In this endeavor we will find it useful to keep a few commonsensical principles in mind. Neither earthquakes nor other vicissitudes that the

[16] Also worth noting here is that the columns of "imperial marble" (*βασιλικοῦ λίθου* – probably porphyry) that according to Nicetas supported the church "all round", as well as extensive revetments of the same material, are nowhere to be seen. Jewell and Hasluck report that the former have been replaced by columns of, for the most part, cipillino marble, also a beautiful stone though one that is not as valuable as porphyry. Jewell and Hasluck do not address the question of whether the current placement of these columns – the intercolumniations – is identical to those of the earlier ones of "imperial marble".

Panagia may have experienced can have lengthened or shortened an intact wall or other structure. If we find that two opposite walls that are both intact differ in length, we can be confident that that configuration is original. By the same token, the vicissitudes a structure may have experienced will not have changed the relative position of doors and windows in an intact wall. If these are now placed symmetrically in a wall, we can be confident that that arrangement is an original one. Equally, no seismic event or other occurrence can raise or lower the height of doors, windows, columns or similar structures.[17]

We can begin by noting that, enclosed within the *Panagia* complex, there are a number of structures that may reasonably be considered *symmetric.*[18] Their presence, even in

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[17] All the metopes on the Parthenon's east front, for instance, differ in width from one another. We can be sure that their widths, and the widths of the triglyphs that flank them, will not have changed over the years, and that they are now what they were when they were first installed on the Parthenon: see Yeroulanou, 1998. On the asymmetry of window and door placement on the Pinakotheke, which must also have been original, see Plommer, 1960. Equally, the heights of the remaining peripteral columns of the Parthenon, "vary erratically and obey no rules", according to Balanos (1938, p.53). They, too, cannot have changed, regardless of the vicissitudes suffered by the Parthenon, and must be original to the structure. These principles can be applied in the study of other ancient buildings, including the *Panagia.*

[18] By "reasonably", I mean to caution the reader not to consider some of my observations here, particularly of small details, as definitive. Jewell and Hasluck provide a scale with their drawings, but that falls far short of the precision needed to determine if something is symmetric. Compounding this, their drawings, thanks to the technique employed by the plate maker, seldom delineate any boundaries clearly. It is quite possible, therefore, that if new measurements were undertaken with modern precision instruments, somewhat (but I think, not radically) different findings would result. The likelihood of such a survey being conducted is not great.

the limited numbers that we find them today, raises the possibility, at least, that they may have been more prevalent in Nicetas' day: so prevalent, indeed, that he could quite reasonably have thought that the *Panagia* was "built wholly symmetric" in our understanding of the term.

One of these symmetric structures in the *Panagia* complex is the chapel of S. Theodosia that abuts parts of the north walls of the Small Church and of the Great Church's transept (*fig.* 8, page 51). Other, probably symmetric, configurations are to be found in the cluster of as many as five chapels that are rather obscurely tucked away to the west of the Baptistery narthex (*fig.* 9, page 51). These are: (A) chapel now (i.e., 1920) disused; D may be part of it; (B) Ossuary[19]; (C) Ossuary; (D) (Jewell and Hasluck caption illegible); (E) chapel now (i.e., 1920) disused.

The opening between A and D is not centered, and so the two segments of the wall it penetrates are unequal in length. The bottom right-hand corner of D has a short length of wall that is not mirrored in the opposite corner. A, moreover, has a small niche on its north (left) wall, that is uncentered and not mirrored elsewhere. In each rectangle, A and D, the widths and lengths mirror each other; and with the exceptions just noted, the two spaces can be considered "just about" symmetric. In B and C, the walls facing each other are equal in length, thus the spaces were almost certainly built symmetrically, though it would seem that some shifting (a result of earthquakes, perhaps) has inclined the verticals slightly to the right, transforming the figures into parallelograms. E, however is different. It is asymmetric, and the fact that the walls along its two lengths are intact, but differ in

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[19] Thus Jewell and Hasluck, pl.1; but it is identified as "Chapel to the Second Advent" in their plate 11.

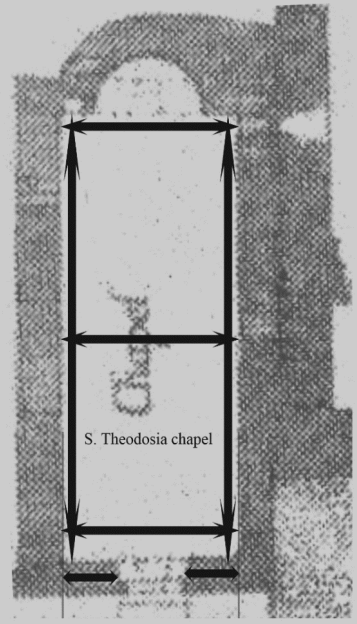

fig 8: *Panagia Hekatontapiliani*, Chapel of S. Theodosia

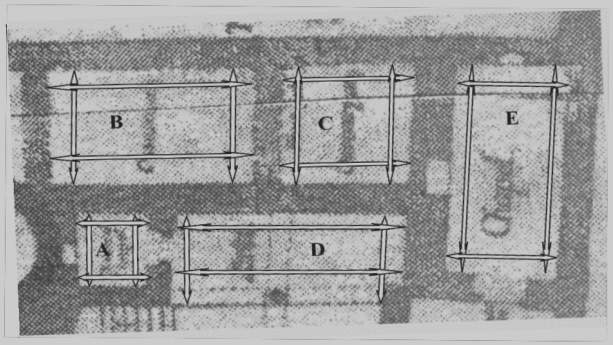

fig 9: *Panagia Hekatontapiliani*,
Plan of chapels in the south-west corner

length, indicates that its asymmetric form was built into the structure at the outset. The entrance to the chapel, moreover, is not centered on the west wall, and was probably built that way (i.e., asymmetrically); the apse (?) on the wall opposite is uncentered; and there is an uncentered niche in the north wall that is not mirrored on the opposite wall. This niche may be a later modification; but there is every reason to believe that the discrepancy in the lengths of the two walls, and the off-centered entrance are original.)

But none of this may be relevant for our purposes, since the key provided by Jewell and Hasluck on plate 1 indicates that the Theodosia chapel and spaces A-E were likely to have been built sometime during the 15th to 17th centuries, or very long after Nicetas' time. If that is so – but we are given no explanation – few, and possibly none, of these are likely to be Byzantine structures. It is ironic that, while we have set out here to investigate the possibility that the concept of symmetry was brought to the West from Byzantium, the symmetric portions of the *Panagia, if* they are of a later date, may possibly reflect the transmission of symmetric design, not from the East to the West but from the West (most probably from Venice) to the East. But of course, all this is speculative, in the absence of any explanation by Jewell and Hasluck, and we should not draw any conclusion, one way or another, about these symmetric areas of the complex.

Although the few examples of symmetry in the church complex are worth noting, they should not distract us from the fact that its principal components are unambiguously asymmetric. They are – (1) the West front; (2) the Small Church; (3) the Great Church; (4) the cluster of Diaconicon, Anargyri and Philip chapels; (5) the Baptistery.

The West Front We do not know the age of the West front façade of the *Panagia* (*fig.* 10, page 53) that Jewell and Hasluck showed in elevation in their 1920 publication – let alone

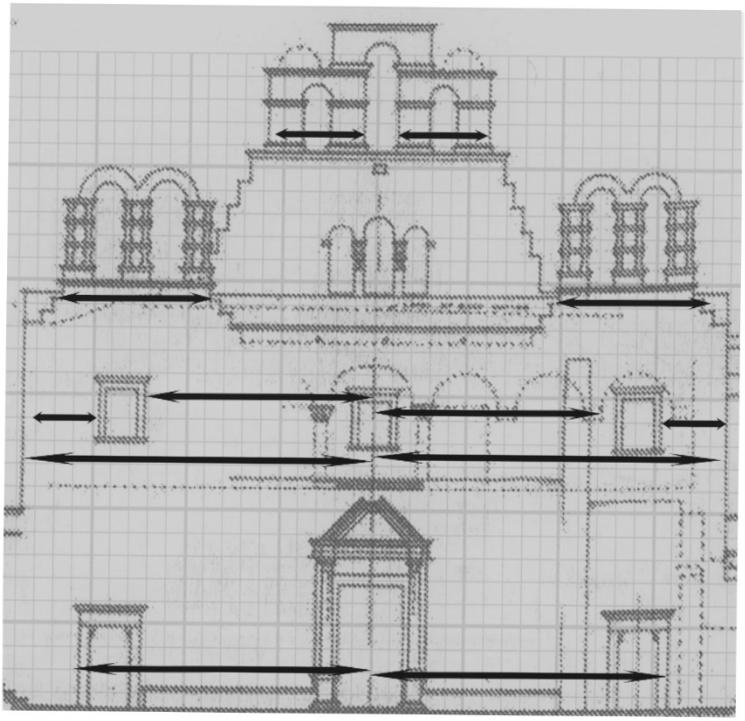

fig 10: *Panagia Hekatontapiliani*, West front
(after Jewell & Hasluck)

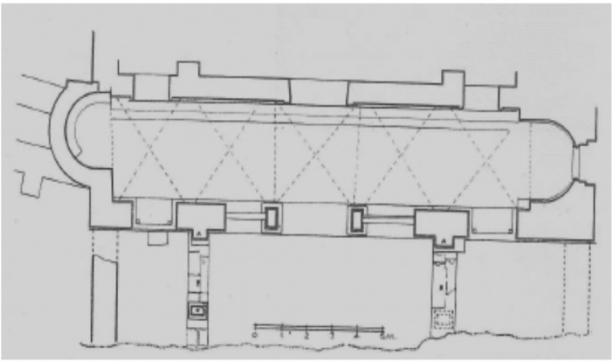

fig 11: *Panagia Hekatontapiliani*,
Plan of Great Church narthex (after Orlandos 1965)

how closely it resembled the original structure. As we have already seen, it differs radically from the structure which replaced it in the 1960's.

The side doors on the ground floor are, in effect, equidistant from the main portal; the main portal, however, is not centered on the structure, (it is left of center), nor are the windows and belfries above it. On the second level, the right-hand window is further from the central window, and closer to the edge of the building, than the window on the left. The belfry on the left is wider than the one on the right, and abuts the stepped gable, whereas the belfry on the right is a distance from it. The belfries on the top consist of three archways. They are not centered on the overall structure. The archway on the left is considerably wider than the one on the right, which in turn means that the two "legs" of the archway that surmounts them are different in width. Clearly, if this façade (excluding the 18th century belfries) at all resembled the structure that Nicetas saw in the 10th century, he could not have meant that it was "built symmetrically" in our sense of the term.

In the 1910 survey, there is only one buttress on the West front – it is close to the (facing) right door and window. As we have already seen, there was a second buttress, close to the left door and window, but it was entirely embedded in the later façade and not visible. Uncovered by Orlandos, it was not set in the equivalent place as the opposite buttress, and had a different configuration – in other words, the arrangement of the buttresses was asymmetric, despite Orlandos' claim to the contrary (*fig*.4, page 42). From the plan (fig.11, page 53) it will be seen that the north and south ends of the narthex did not mirror each other, and also that the west and east doorways of the narthex are not on the same axis.

The Small Church. The corner where the northern end of the Great Church transept meets the western wall of the Small Church is not a point that will have changed, because it is part of the continuous line (allowing for the three entrances) formed by the western wall. The length of the northern wall (at least up to that point, but probably well beyond it, can thus be considered original. Even if (for the sake of argument) we were to "correct" the dramatic slope of the eastern wall of the Small Church away from the apse so that the line of the eastern wall on either side of the apse is a straight one, we would not correct the discrepancy between the lengths of the north and south walls, which is an inherent – original – and asymmetric feature of the church. (To deny that the discrepancy is original one would have to assert that natural forces somehow lengthened the one wall or shortened the other – and that, to say the least, would be a most implausible assertion.)

The vertical line that I have superimposed on the plan in *fig.* 12 (page 56) indicates the central axis of the Old Church. Arrows "A" and "B" indicate that the north (left) and south boundaries of the church are equidistant from this line. The twisting (in a relatively shallow angle) of the apse and the east wall to the right, and of the west wall (more acutely) to the left means, however, that the left and right sides of the church do not mirror each other across that central axis – the church interior therefore is asymmetric. The sharp slope of the western wall is perhaps the most pronounced asymmetric feature of the church. The entrances on the west also add to the overall asymmetry for the flanking portals are not equidistant from the walls they adjoin; and the central entrance – "F" – is not centered on the main axis. The arrows "C", "D" and "E", moreover, show that the columns and piers in the nave are not centered on the axis (though not uniformly so): they too, therefore, are asymmetric.

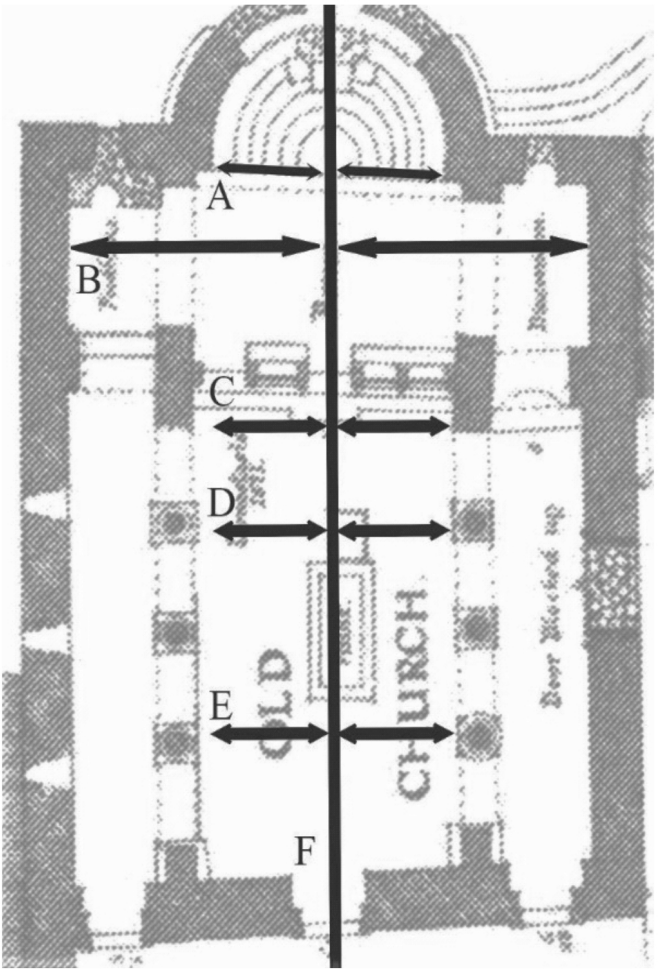

fig. 12: *Panagia Hekatontapiliani*: the Old Church
(after Jewell and Hasluck)

The Great Church (i). The *northern* wall of the Diaconicon and the Anagyri chapel is also the southern wall ("C", right) of the Great Church bema (*fig.* 13, page 58). The interior of that wall is the same length as the interior of the *southern* wall of the Diaconicon and the Anagyri chapel, and the two are to all intents and purposes parallel to each other. We can therefore assume that their lengths are unchanged. The *northern* wall ("C", left) of the bema, however, which it shares with the Small Church, is *longer* than the bema's southern wall; and because the lengths of these two walls must be unaltered, it follows that the asymmetry of the Great Church bema is original, and not the result of whatever later vicissitudes the structure may have experienced. In other words: the asymmetric relation of those two walls is the same as it was when Nicetas visited the church in the tenth century.

Two walls ("A") stretch, respectively, from the south-west and north-west corners of the Great Church transept toward the nave. These walls differ in length (the latter is longer) and those differences are original to the structure, also constituting an asymmetry. The distance from the north-west corner to the western wall of the Small Church ("B", left) is smaller than the distance at the opposite, southern end ("B", right) of the transept. The entire shape of the transept, therefore, is asymmetric, and I think we can be reasonably confident it too is not the result of later vicissitudes but is original, and close, if not identical, to what it was in Nicetas' time.

We see (*fig.* 14, page 59) from Orlandos' drawing[20] that the dome that surmounts the transept is an irregular ellipse – an asymmetric shape, in other words. The distance between no two of the piers is the same, and the size of each pier is different. Orlandos believed that these differences indicated that the piers had previously supported the dome of

[20] Orlandos, 1965.

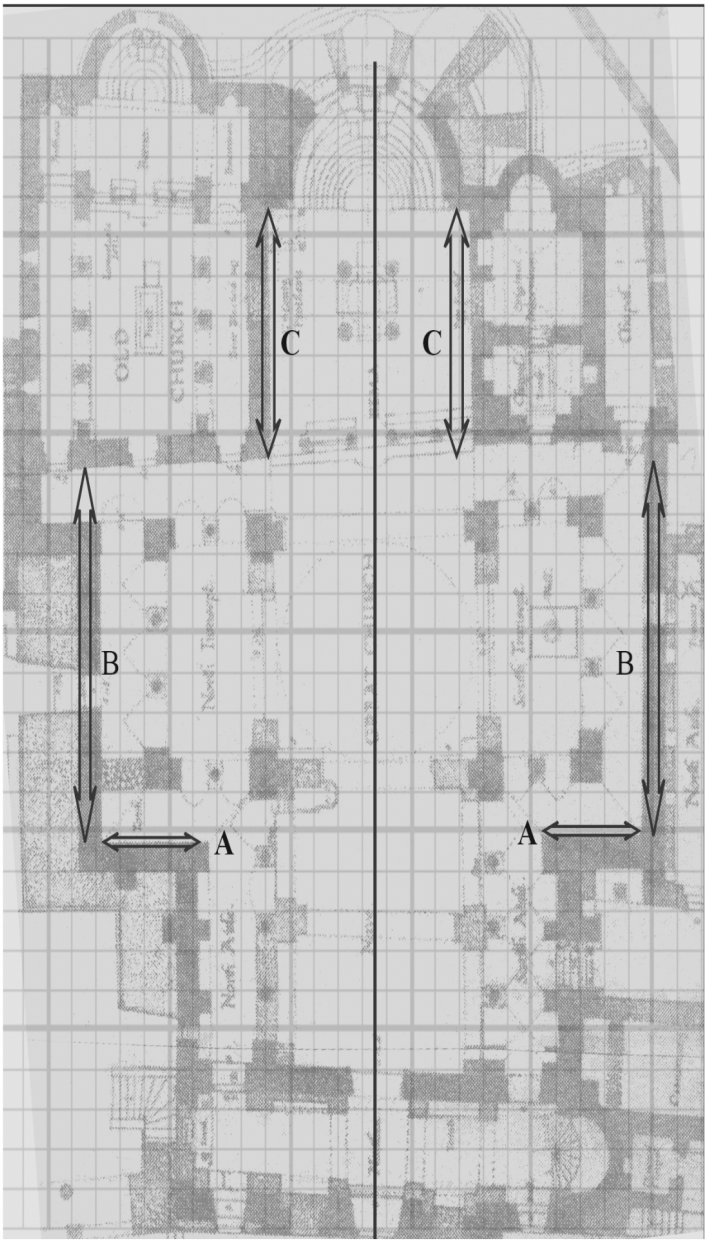

fig. 13: *Panagia Hekatontapiliani*: the Great Church
(after Jewell and Hasluck)

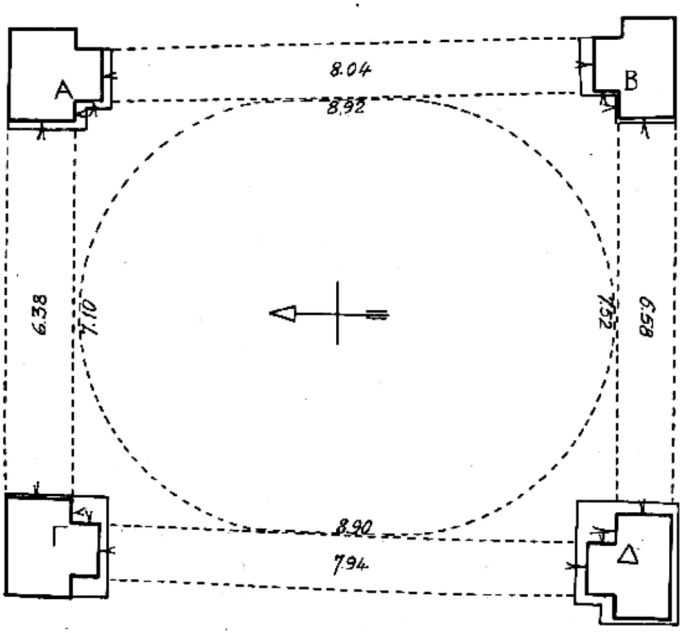

fig 14: *Panagia Hekatontapiliani*, Great Church dome piers (after Orlandos 1965)

an earlier church, but that is not an unavoidable conclusion. Suffice it for our purposes to recognize that this important feature of the Great Church is also asymmetric.

The Great Church (ii) In *fig.* 15 (page 61) I have superimposed a line to indicate the central axis of the Great Church, extending from the narthex in the west, to the apse in the east.

For its entire length, this axis is to all intents and purposes parallel to the north and south (left and right) boundaries of the Great Church. However, from the east end of the transept to the apse, as well as in the Old Church (*fig.* 12, page 56), the lateral arrangement of piers and columns shows a pronounced twist downward to the left; but from the west end of the transept through the narthex the twist is in the opposite direction (see also *fig.* 19, page 67). And it is when the twist is downward to the right that the central axis ceases to be a central axis – that is, it is no longer positioned equally between (though it remains parallel to) the left and right boundaries of the church but has moved quite noticeably closer to the left (north). Indeed, even the doorways that lead into the narthex from the outside, and from it into the nave, are not equally bisected by the "central" axis.

I will explain presently why I believe that the lateral twist down to the left is original to the structure, and not a consequence of earth tremors or other occurrences. Here, however, I would suggest that that twist, as well as the divergence of the axis away from the center (in the section that runs from the west end of the transept through the narthex), both imply that the Great Church was never intended by its builders to be a symmetric structure.

The Diaconicon and **the Chapel of the Anagyri** abut the southern flank of the Great Church bema; and *their* southern flank abuts the chapel of S. Philip (*fig.* 16, page 62). These

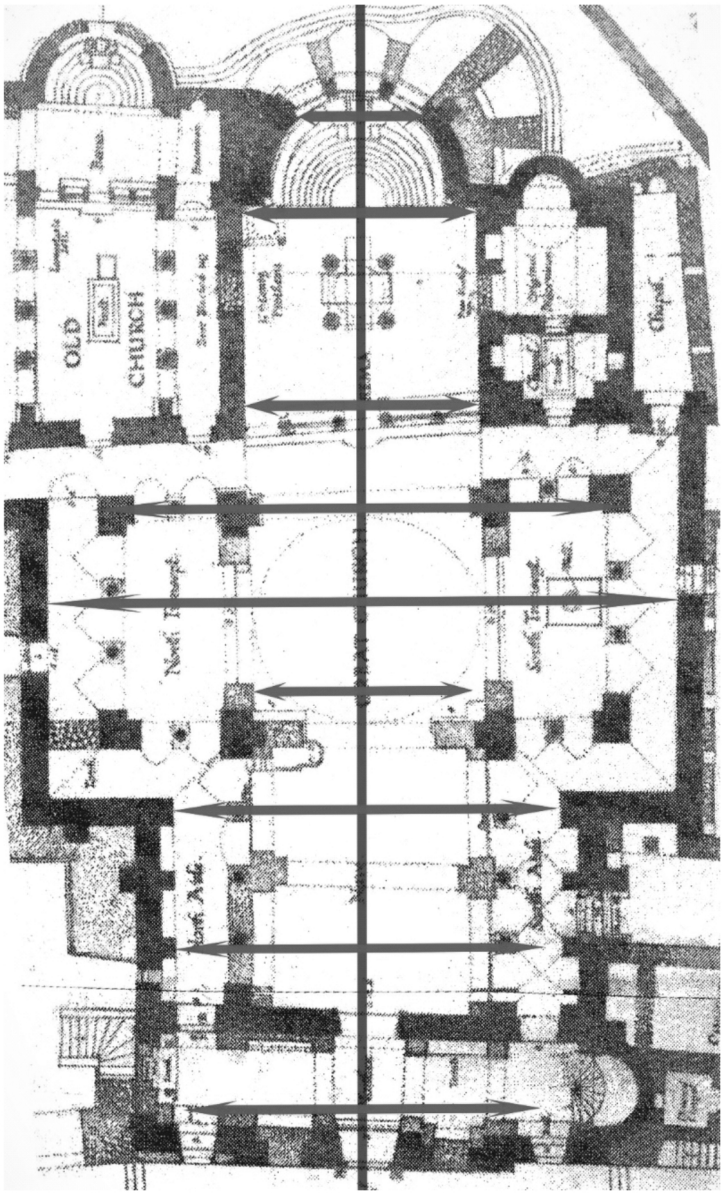

fig. 15: *Panagia Hekatontapiliani*: Great Church axis
(after Jewell and Hasluck)

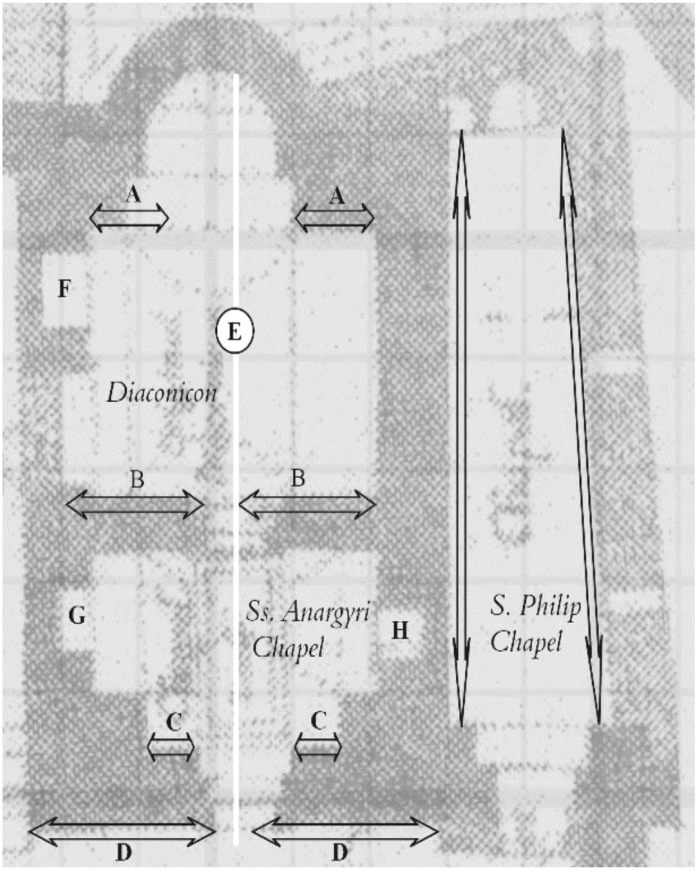

fig. 16: *Panagia Hekatontapiliani*: Great Church
Diaconicon; Ss.Anargyri and S.Philip chapels
(after Jewell and Hasluck)

structures are markedly asymmetric. There is little room for doubt that their asymmetries are original. The "shoulders" of the massive inner wall of the Diaconicon's apse ("A") cannot have changed their different dimensions and shapes. They are original, as is the niche on the north wall, ("F"), which is unmatched opposite, and the doorway next to it, now blocked, into the Great Church Bema. The entry into the Diaconicon from the Anargyri chapel is uncentered on the wall it cuts through, ("B"), and is on a very different axis from the apse it faces to the East. The entry into the Anargyri chapel from the West is uncentered on the wall it penetrates ("C", "D") and on a different axis ("E") from the doorway into the Diaconicon. Alcoves on its North and South walls ("G","H") have different dimensions and are not in equivalent positions. There is no reason to believe that the locations of any of these features of the Diaconicon are not original, or that their current positions resulted from earthquake-induced shifting of the structure.

The chapel of St. Philip poses a seemingly unsolvable puzzle. The eastern end of it seems to have been pushed northward into the Diaconicon's apsidal wall; but this observation can be questioned on the grounds that the latter, an earlier structure, appears completely unaffected by any such move. However the enigma of this chapel is to be explained, there can be no doubt that in its present form (including the off-centered apse) it is an asymmetric structure. Perhaps we can be excused from further consideration of it by accepting the (unexplained) designation of it by Jewell and Hasluck as a seventeenth-century structure, and *therefore definitely* one that Nicetas Magister would not have known.

The Baptistery (*fig.* 17, page 64) According to Jewell and Hasluck (p.59), is "certainly a later erection than the Great Church". However, on a subsequent page (p.62) they declare

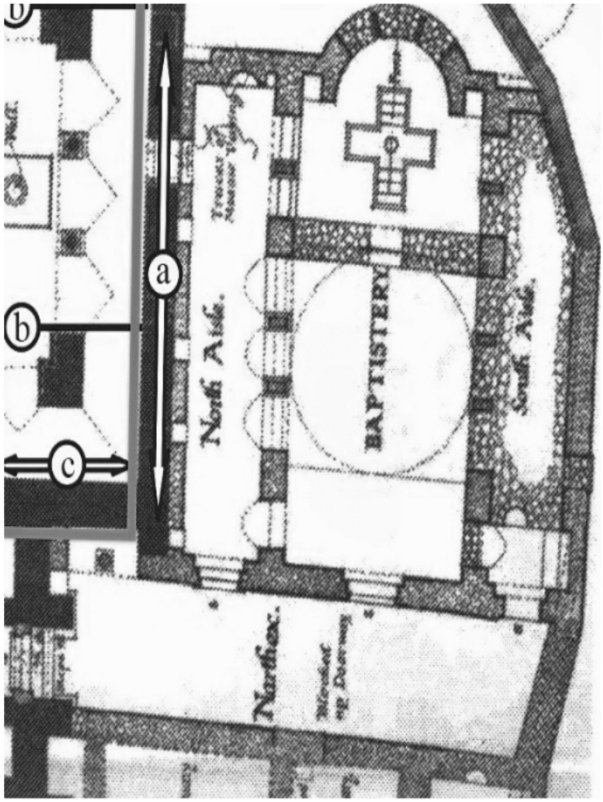

fig. 17: *Panagia Hekatontapiliani*, Baptistery and Narthex
(after Jewell and Hasluck)

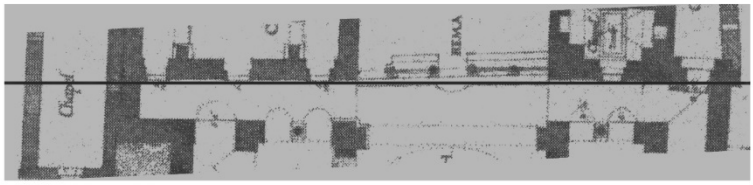

fig. 18: *Panagia Hekatontapiliani*: the angled line
(after Jewell and Hasluck)

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that it was built in the same "comparatively short period" as the Small and Great churches. The key in their Plate 1 unambiguously dates the Baptistery to the "6th Century", though it also gives a 15th century or later date (the key is illegible) to the piers on the north and south flanks of the aisle, and to the walls (with doorways) that separate the baptistery from its narthex. The south aisle was closed off, probably at a later date, but for a small and asymmetric chapel ("the Holy Spirit") that is entered at the south-east corner of the narthex.

The width of the Baptistery bema remains constant across the plan, and the same holds for its length; and the font is centered. However, the north and south boundaries (consisting of piers?) of the bema are not parallel, and actually bend away from the outer lines of the nave of which they are the continuation. Remarkably, the bends of the two sides of the bema are inconsistent with each other. The northern line bends to the south; but the southern line bends to the north. The degree of the bends is different, that on the south being more acute. The same event could not have shifted both lines therefore, and I doubt whether their shifts *were* caused by an "event", such as an earthquake, because the north and south sides of the nave, of which they are a continuation, run straight and true. I think it is more plausible, therefore, to think that these are original asymmetries, rather than the results of later events.[21]

It should be noted too that the dome is not centered over the nave but is closer to the south-east; and that while the piers on the south flank of the nave are equidistant from one another, on the northern flank the two central piers are closer to each other than either is to the piers on their other

[21] Jewell and Hasluck,p.64, suggest that the cross-wall between bema and nave was a "later" addition to buttress the structure, It runs at different angles, in neither case right-angles, to the north-south boundaries of the nave and bema: another asymmetry that is certainly original.

side (their arrangement, however, is symmetric). The piers on either side of the bema are not centered, though both are identically spaced. In the north aisle the entrance from the narthex is not centered, but closer to the north. The apse in the bema is off-center (to the south) and the small semicircular niche to its left is not repeated elsewhere. We can be quite confident that the Baptistery's asymmetries were not caused by later upheavals and almost certainly were built into the structure from the outset. An earthquake is unlikely to have changed the arrangements of the piers at the north and south of the nave, *while at the same time keeping them all symmetric*! Nor, as already pointed out, would it have altered the bends of the bema's rows of outer piers at different and opposing angles. Almost certainly, they were parts of the structure that Nicetas saw in the tenth century.

The *Panagia Hekatontapiliani* – conclusion: In much of what we have seen so far, the view of the *Panagia* as a baffling topsy turvy of irrational forms would seem justified. There is however a further set of observations to consider, and it may lead us to modify this view to some extent.

We have already seen that the northern wall of the Old Church runs parallel to the southern wall opposite it. The church's western wall, penetrated by three entrances, connects the western ends of these two walls. Because the southern wall is shorter than its opposite, the western wall is set at an angle as it runs from the longer to the shorter wall. This angled line ,"A-A", (*figs.*18; 19; pages 64, 67), continues across the Great Church bema, onward, flush with the western wall of the Anargyri chapel; and terminates at the western wall of the chapel of St Philip which, as we have seen, is probably a 17th century addition to the *Panagia* complex. Excluding it and the Theodosia chapel, which is perhaps also a later addition, the line runs at an angle – in effect unbroken – from the north to the south extremes of the complex, linking the Old

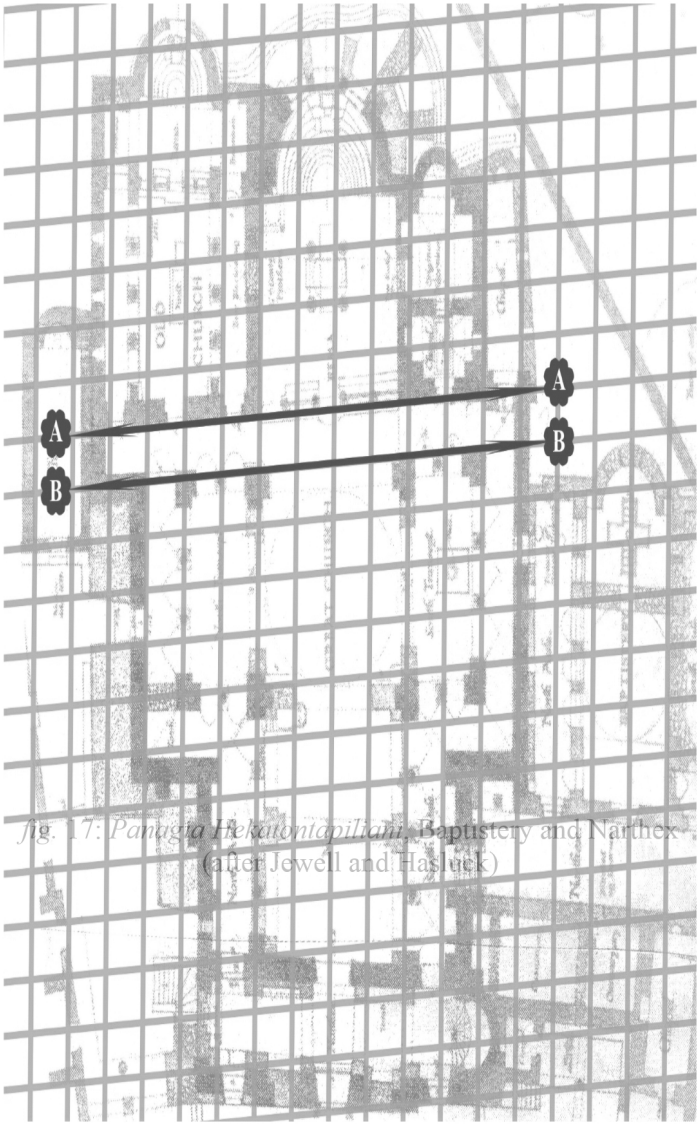

fig. 19 *Panagia Hekatontapiliani*: the angled line and its grid (after Jewell and Hasluck)

Church, the Great Church, and the Anargyri Chapel. The architectural elements it runs past do not always abut it *exactly*, (*fig.*18 page 64), but they are always parallel to it and there can be no doubt that they belong to the scheme delineated by the angled line. The piers of the east side of the transept and the bend from the north end of the transept to the Theodosia chapel are on a line,"B-B", (*fig.*19, page 65) that is, in effect, parallel to "A-A".

I consider line "A-A" to be the starting point, the base line, of this configuration, because the elements it connects are far more consequential than those connected by "B-B". Moreover, the north-south walls, from the interior of the Old Church north wall to the south wall of the Anargyri Chapel, all of which, to repeat, are parallel, are longer or shorter *so as to accommodate line "A-A"*. If nothing else, this latter fact suggests that line A is not the result of a seismic shift or other misadventure but was intended to be the way that it is.

Two further considerations are to be noted. As we have seen, line "A-A", sloping down to the left, is repeated (albeit not quite precisely) by line "B-B" next to it, thus forming the parallel lines of a visual corridor. I do not find a parallel slope anywhere else in the entire complex, where the lateral lines also slope, *but in the opposite direction, and in varying degrees, down to the right.* This, I believe, also suggests that line "A-A" was not inadvertent: that it was intended to be the way it is. Noting that the south end of the transept is longer than the north (*fig.* 13, page 58; lines "B-B") raises the possibility that the downward slopes to the right, west of the transept, may also be original.

It is particularly curious, I believe that, regardless of the direction and degree of the lateral slopes, the *longitudinal* – the west-east – lines of the complex, (excluding the appended structures to the south, which Jewell and Hasluck

consider to be of much later origin) are all either parallel or deviate by only a very small amount. They are unaffected by the changing slopes of the lateral lines (and vice-versa) and are surely original. It is highly improbable, I believe, that seismic or other forces would have forced the lateral lines into the slopes in which we now find them, but would have left the parallel longitudinal lines unaltered. I therefore suspect that both the lateral and longitudinal lines are original.

I have no explanation to offer for these baffling facts. Very possibly, the key to them lies in that mysterious angled line "A-A" in *fig.* 19. If my analysis here strikes readers as unconventional or even implausible, I would urge them to recognize that it is based on the unconventional and even implausible disposition of the parts of the *Panagia* as recorded, principally, by Jewell and Hasluck. I did not invent the facts that they recorded (but which they seem not to have noticed)!

The symmetric and perhaps-symmetric areas of the *Panagia* structure are few and of secondary importance; quite possibly, they are all post-Byzantine in origin.

We have noted numerous asymmetric areas, and have explained why it is most unlikely that many (or perhaps any) of them had originally been symmetric until they were altered by seismic events or other mishaps.

On the contrary. The remarkable concatenation of (variously) angled lateral lines and parallel longitudinal lines that appears in the plan of the churches, and which I have given reasons for believing is the original arrangement, resulted in a structure that was from the outset pervasively asymmetric.

We can therefore conclude, and with confidence, that the church that Nicetas visited was not "built wholly symmetric" in our understanding of the term.

How then are we to account for Nicetas' description of the church?

There are two possible explanations. The first is that Nicetas understood (and assumed that his readers would understand) something different from what we nowadays take "symmetry" to mean: though we have no inkling of what that meaning could have been.

The second possibility is that Nicetas thought that what he saw was indeed a symmetric structure, in our sense of the word. The misperception of asymmetric forms as symmetric is, as we have already seen, a common phenomenon that we can trace as far back as the middle of the 15th century, when Leon Battista Alberti formulated a *concept* of symmetry that had as one of its fundamental axioms that nothing can be beautiful unless it is symmetric. When Alberti saw something that he thought was beautiful, his concept of symmetry required that he should see it as symmetric, too, even if it was in fact asymmetric (as most things are). Was it perhaps something along these lines that caused Nicetas to misperceive the forms of the *Panagia*?

I am struck by Nicetas' statement that the *Panagia* was a wholly (*ολόκληρος)* symmetric structure – that it was "wholly built symmetric".

We have seen enough, I suggest, to believe that even in his day probably *no part whatsoever,* of the *Panagia* was symmetrically shaped. I would go so far, indeed, as to propose that the entire structure was probably *never* symmetrically shaped. It was no more symmetric than the Classical statues and buildings – not to mention all of Nature's artifacts – that Alberti and countless others since his day have greatly admired and *therefore* let themselves misperceive as symmetric. The reason they have done so may well be the same reason that Nicetas regarded the *Panagia* as symmetric.

Nicetas thought that the *Panagia* was beautiful, that it was a real feast for the eyes, *because* (as he said: the Greek *διότι* is unambiguous) because it was wholly symmetric. Its symmetry was, for Nicetas, a prerequisite. Without it, the structure would not have appeared beautiful to him; because, for him, its beauty was an inescapable correlate of its symmetry. And note his insistence that the structure is "wholly" symmetric. To meet Nicetas' cognitive needs, he could not allow any portion of it to be asymmetric. Not merely part of the complex, but all of it had to be symmetric! The objective fact that the *Panagia* was *not* a symmetric structure justifies us, I believe, in suspecting that the cognitive sequence at work in Nicetas was probably the opposite of what he implied in his statement. That is to say, he did not see the *Panagia* as beautiful *because* he saw it as symmetric. Rather, he saw it as symmetric *because* he saw it as beautiful. The perception of the structure as beautiful, in other words, was prior to the perception of it as symmetric. Nicetas would have been unable to acknowledge, let alone to sustain, the prior perception unless and until he allowed himself to misperceive the structure as symmetric. After all, only symmetric forms can be beautiful. And so, in defiance of reality, and to validate – to *permit* - his perception of its beauty, he perceived the *Panagia* as symmetric.

This, I hope the reader will permit me to repeat, could be the mechanism, or something like it, that we see in operation in Alberti five hundred years after Nicetas. It is indeed precisely the mechanism we see widely in operation down to the present day, with the compulsive misperception of beautiful (or otherwise significant) objects as symmetric. Its manifestation, possibly, in a tenth-century Byzantine could indicate that it may not have originated in the Italian Renaissance, as I had assumed, but half a millennium or so before then. In this respect, at least, Nicetas Magister could be

considered a forerunner of Leon Battista Alberti, and of the many, many others who followed, and follow, his example: some of whom, like Licia Ragghianti (*fig.* 1, page 6), we have encountered or will be encountering on these pages.

I am not suggesting, of course, that Nicetas possessed anything like the boldly-articulated concept of symmetry that was introduced to Italy in the fifteenth century. His remarks about the *Panagia,* however, could well be an early adumbration of it.

To be sure, this is a mere hypothesis, and there is no evidence other than Nicetas' statement (or rather, my speculative interpretation) to substantiate it.

But as things stand now, no other explanation appears in sight for why Nicetas thought that the pervasively asymmetric *Panagia Hekatontapiliani* on the island of Paros was "wholly built symmetric".

Chapter Five.
Symmetry: "an abiding principle"?

It should be borne in mind that the notion that symmetry was "an abiding principle of Byzantine composition" is a modern academic construct that is not corroborated by the artifacts and literature of Byzantium itself. As we have seen, it has its ultimate origin in the insistence of the 15th century Florentine, Leon Battista Alberti, that nothing can be beautiful unless it is shaped symmetrically.

Alberti claimed, (readers will judge how plausibly), that he had examined "every building of the ancients, wherever it might be, that has attracted praise".[1] These studies led him to conclude that classical architects always ensured that the lateral halves of the buildings they designed mirrored each other ("*dextra sinistris … convenirent"*) precisely ("*exactissime*"), and down to the smallest detail ("*in minutissimis*").[2] Classical artists and craftsmen, according to Alberti, also obeyed these imperatives. Though obviously mistaken, Alberti's claims went (and remain) largely unchallenged.

Since Alberti's day architectural historians have taken

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[1] *De re aedificatoria* VI:1,3,6. The only ancient structure that Alberti mentioned by name that he had examined (*ibid,* IV:3) were the ruined walls of Antium Anzio, his comments on which were limited to the banal observation that the walls followed the winding line of the coast and must have been very long. Grafton (2002: pp. 233, 254-6) states that Alberti "presumably" and "very likely" made notes about and drawings of ancient structures, but he has nothing to substantiate his presumption, and he himself admits (*ibid,* p.255) that "the documents do not state as much".

[2] *Aedificatoria,* Bk. IX, cap.7. Alberti did not restrict his misperceptions to Classical art and architecture. He insisted that Nature's artifacts, too, conform to *collocatio,* as he called it, and that it was by studying them that the Ancients discovered the concept of symmetry..

pains to delineate with great precision – *in minutissimis* - the buildings they study . Perhaps inevitably, it was the Parthenon that was their first and foremost focus of attention, and it became (and may well still be) the most frequently-measured building on earth. The first survey of it was conducted in the 17th century by Francis Vernon, who reported back to his sponsor, the Royal Society in London, that his measurements were "exact to ½ foot".[3] His contemporaries, Wheeler and Spon, reported that *their* measurements were accurate to the inch in some instances, and to the foot in others.[4] Stuart and Revett, in their famous study, (1762), claimed that they had achieved accuracy of one-thousandth *of an inch.*[5] (Nevertheless, they failed to detect, among much else, the *entasis* of the Parthenon's columns.) A century later Penrose more modestly claimed that his measurements were accurate to one-thousandth of a foot, or about one-third of a millimeter: yet he did not detect the curved elevations of the Parthenon's east front.[6] In the twentieth century Dinsmoor and Balanos each made measurements of the structure, and each declared that his measurements were accurate to within 1.0mm and in some instances to within 0.5mm. Yet their measurements of the same features usually differed by more than that amount. Dinsmoor, for instance, found that all of the axial spacings of the external columns on the Parthenon's east and west fronts were identical, while Balanos found that they varied by as much as 8cm.[7] To this day, no one knows what the measurements of the Parthenon really are: let alone what they were originally.

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[3] Quoted Redford, 2002.

[4] Frank Stanton, introduction to Stuart and Revett, v.2, pp.1-3.

[5] *Ibid,* pl.5.

[6] Penrose 1888, p. v.

[7] A related, and also seemingly intractable, issue is how to determine – on stones that are almost always worn and damaged – the points to and from which measurements are taken.

It is all very well, therefore, for investigators to boast of their tools and methods, but there really is no reason why we should think their measurements are valid.[8] That being the case, must we not also view skeptically their findings about the symmetry of buildings they have measured?

Such considerations, it would seem, rarely trouble scholars. Indeed, what has been accepted, since the 15th century, as true about the symmetry of Greek and Roman design, has more recently come to be considered as equally applicable to Byzantine design, too. That is to say, it is now received doctrine that symmetry is "an abiding principle of Byzantine composition". We must ask, however, whether we have any reason whatsoever to believe, *a priori*, that the measurements on which claims about the symmetry of Byzantine works are based are any the less unreliable than those on which similar claims are based about the symmetry of Classical works.

Indeed, with its dubious antecedents, the thesis that symmetry was an important element – "an abiding principle", yet! - of Byzantine aesthetics should be treated with skepticism. So too should assertions that specific objects are symmetrically shaped. To be sure, we do not always need sophisticated precision instruments to determine whether something is symmetric or asymmetric. A shape may be so unambiguously the one or the other that we can make that determination with the naked eye. Yet this consideration cannot give us as much confidence as it otherwise might for, as we have seen, a widespread bias in favor of symmetry often leads people to believe that an obviously asymmetric form

[8] Balanos (1938, p.53), proudly claimed (but without elaborating further) that he had employed "*la methode habituelle*" and "*un niveau Zeiss de grande precision*" in his surveys. Dinsmoor seems not to have commented on the differences between his measurements and those made some years earlier by Balanos.

they are looking at is symmetric.

No matter how often and how authoritatively we are presented with a statement that something is symmetric, therefore, we are well-advised to reserve judgement until we have looked at the purportedly symmetric object ourselves, and scrutinized its form as rigorously as we are able. I believe that if we do so, we will arrive at a view of the role of symmetry in Byzantine art and architecture – of its role in the Byzantine aesthetic - that is very different from the one that prevails today.

That is the objective I pursue in this chapter.

Istanbul *Hagia Sophia*: The greatest achievement of Byzantine architecture is the church (as one may reasonably still think of it) of Holy Wisdom – *Hagia Sophia* – in Istanbul, formerly Constantinople. Its construction history began in the year 530 CE during the reign of Justinian, and the building as it stands today has numerous ancillary structures (*fig.* 20, page 77) that were added to it over the centuries, many by the Turks who gained control of the church in 1453 and converted it into a mosque. (Its earliest addition is the great dome, which was replaced in the second half of the sixth century after the original dome collapsed.)

A remarkable resource for the study of *Hagia Sophia* are the detailed architectural drawings that Robert L. Van Nice produced as the result of the ambitious survey of the structure that he and his associates conducted between the years 1937 and 1985.

His labors surely enabled Van Nice to know *Hagia Sophia* more intimately than anyone has before or since. However, his views on the structure were sometimes startling, as in the comment he made, in the introduction to the published

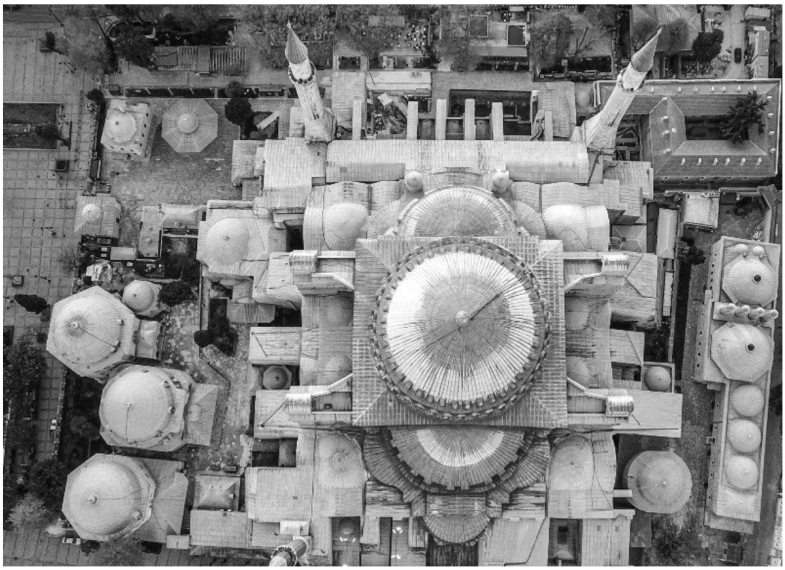

*fig.*20: *Hagia Sophia* and its ancillary structures today

edition of his drawings, that *Hagia Sophia is* "a building essentially symmetrical".

This is a strangely ambivalent remark. It implies that the building is not *entirely* symmetric – which of course must mean that parts of it are asymmetric. Van Nice implicitly dismissed those parts as inessential, but he never disclosed his reasons for doing so. (We will presently see how very *essential* they in fact are!) We do not know whether, despite this, he nevertheless investigated the building's asymmetries; we only know that he did not so much as allude to them again in his published works. By dismissing them as inessential, Van Nice may have sought to justify his decision not to address the subject, though why he would wish not to do that is a mystery. It is also a great pity, because Van Nice was in a perhaps unique position to undertake such an investigation.

The Van Nice drawings, of course, are there for us to study, and our analysis of *Hagia Sophia* will largely be based on them, even if we do not consider ourselves bound in every instance to *his* understanding of what they show.

But how dependable are the Van Nice drawings? His claims are worth noting:

> All the drawings have been constructed by measurement from survey traverses laid out with an instrument at successive levels, and related, for the most part, by lines; further, whenever possible details have been added, not in a studio elsewhere but at the site itself. As many of the 139 odd spaces dealt with are mutually inaccessible, and some are penetrable only through well-like openings in their vaults, the accuracy of the outline of certain areas is not millemetrically correct. On the other hand, for all ordinary purposes, the range of error is so slight as to be meaningless. The aim of presenting a trustworthy record of the form and condition in which Saint Sophia reaches us in the twentieth century has, on the whole, been

> fulfilled with precision satisfying every normal demand of scholarship.[9]

One or two phrases in this statement seem to suggest that Van Nice himself had certain reservations about the accuracy of his work. The margin of error in his drawings, he says, "is for all ordinary purposes" negligible; and he also says that they satisfy "every normal demand" of scholarship, and that they are "trustworthy … on the whole". There is more than a little wiggle room in these phrases, and we would do well not to ignore them. My reservations are not intended to disparage Van Nice's very considerable achievement in making these drawings, but only to suggest that we use them – as we should use all other data about the dimensions or proportions of buildings – with some caution. And this is not merely a theoretical concern, for at least *some* of the errors Van Nice made cannot be considered "meaningless" (to use his term). As one instance, an aerial view (*fig.* 21, page 80) centered on the main dome shows a number of asymmetric relationships on the east and west sides of the structure (indicated by my superimposed arrows) that Van Nice failed to record (compare f*igs.* 21 with *figs.* 23 and 24, pages 84, 86). Are these asymmetries "meaningless"? Can they be ignored "for all ordinary purposes"? Or do we enhance our understanding of *Hagia Sophia* by acknowledging and attempting to account for them?

We move on, now, to examine the principal components of *Hagia Sophia*'s structure with a view to understanding the extent to which symmetric or asymmetric configurations are present in it.

***Hagia Sophia* plan:** The lines I have superimposed on the two narthices shown on Van Nice's plan of *Hagia Sophia*

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[9] Van Nice 1965, pp.4-5.

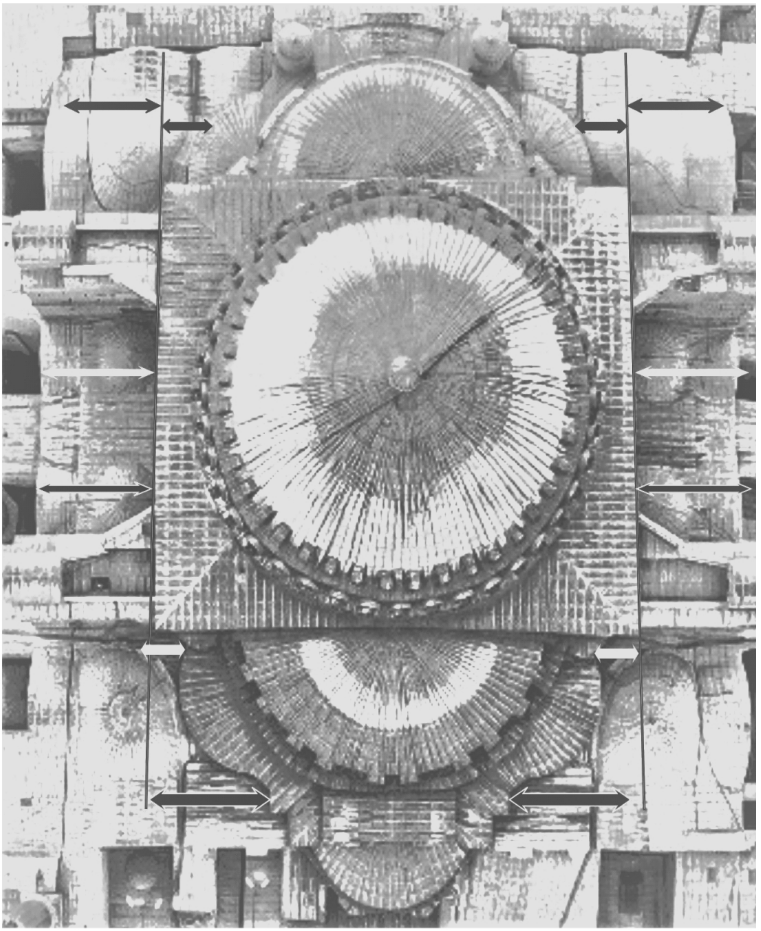

fig. 21: *Hagia Sophia.* Compare half-domes in this image and those in figs. 23 and 24. (Top is west, bottom, east.)

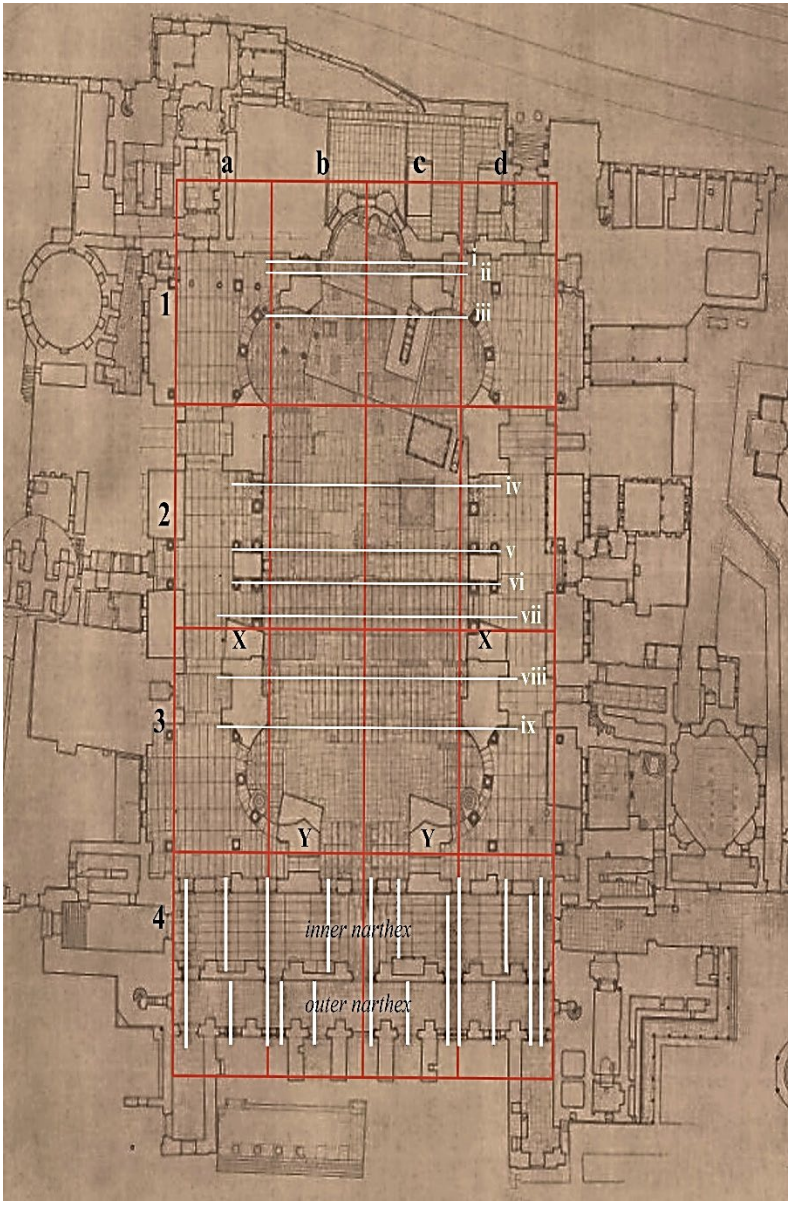

fig. 22: *Hagia Sophia,* plan (after Van Nice)

(*fig*.22, page 81; see *fig*.22a on p.viii of *Addenda and Corrigenda,* above) illustrate the paradoxical nature of the entire structure. The three rows of doors leading into and out of the narthices are each spaced symmetrically and are centered on a common axis; yet, none of the doors are directly opposite each other, and some, indeed, face blank walls. Adding to the asymmetry of these arrangements, while the inner and outer rows have nine entrances, the middle row has only five. The flow of worshippers into and out of the narthices was evidently not intended to be a smooth one. Two structures protrude from the left and right flanks of the outer narthex; they are asymmetric in themselves and in relation to each other. My large grid, a-d; 1-4, shows that the nave proceeds at right angles to the horizontal lines of the narthices, and that the relationships of structures within the grid are both asymmetric and symmetric. The former include the features marked X and Y, and those from i to ix (though only I, iv, vi and vii are unambiguously asymmetric; the apparent asymmetry of the others may possibly be attributed to imprecise drafting. (see *fig*.22.b on p.ix of *Addenda and Corrigenda,* above.) The far ends of X and Y are parallel angled lines, which is to say that they do not mirror each other and are therefore to be regarded as asymmetric. The upper third or so of grid row 1, a-d, and the lower third of grid row 1, b-c, are clearly asymmetrically related to one another. All the elements beyond the left and right sides of the grid are asymmetric in their relation to each other. All in all, then, it is impossible to identify a single rationale that accounts for the layout of the plan, or that confirms van Nice's description of the structure as "essentially symmetrical".

***Hagia Sophia* east elevation.** Some element of the lower half of the east side of the structure are obscured by what I take to be later additions. Nevertheless, a number of asymmetries

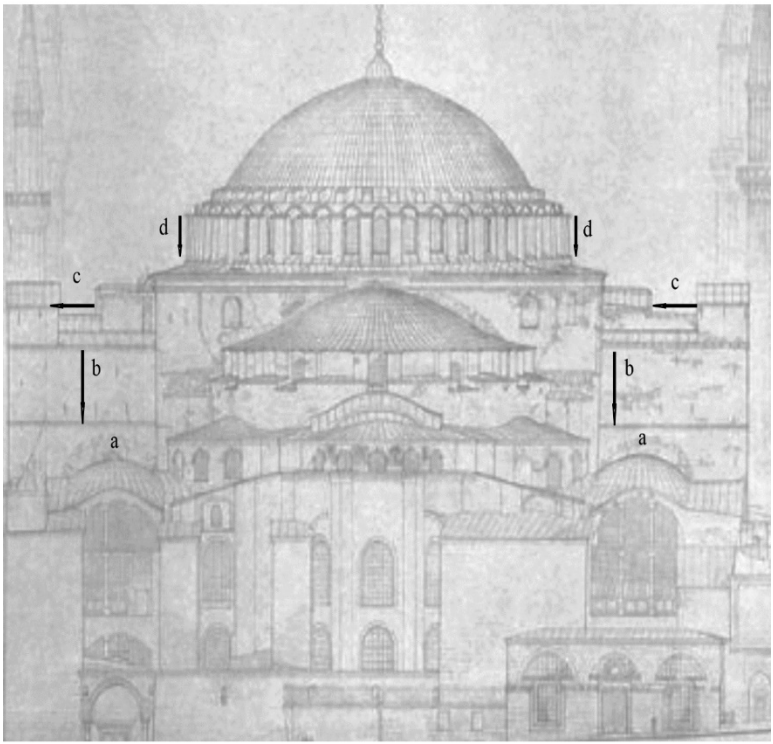

*fig.*23: *Hagia Sophia.* East elevation (after Van Nice)

can be observed in the upper half (*fig*.23, page 83). The contours of the two roofs "a" are noticeably different, with that on the right being more rounded, and that on the left coming to a sort of peak. The heights of the walls "b" differ, with that on the right being taller. The walls above them seem to be a sort of battlement, each with a single crenelation, "c", with that on the right being wider than the other. The dome seen from the east is more regularly-shaped than when it is viewed from other perspectives, but even here there is one notable asymmetry, in the height, "d", of the ring in which the windows of the dome are set. It is lower on the right than it is on the left. All that said, there are also symmetric forms to be noted here. The secondary cupolas, with the exception of "a" and "a", appear to be symmetric, as does the structure between the two "a's".

***Hagia Sophia* west elevation** (*fig.* 24, page 85). The four buttresses (?) in the front of the structure are not aligned with the large lunette above them. I suspect, however, that they are a later addition. The ring with windows at the base of the dome is taller ("a") on the right than on the left. The half-dome (between the "b's") is not centered on the wall behind it, as we saw in the *fig*.21 (page 80) photograph, where the discrepancy may possibly be more pronounced than it is in Van Nice's drawing. The wall and the battlement on top of it, ("c" and "d") is taller on the right than on the left; and the wall indicated by "e" is wider on the right than on the left. The large half-dome, though not quite centered, as already noted, is symmetric, as is the structure on which it rests, as well as the structure immediately below it with the large lunette window and the two flanking structures,

*Hag**ia Sophia*** **north elevation** For reasons that are unclear, Van Nice did not publish the north elevation of *Hagia Sophia*.

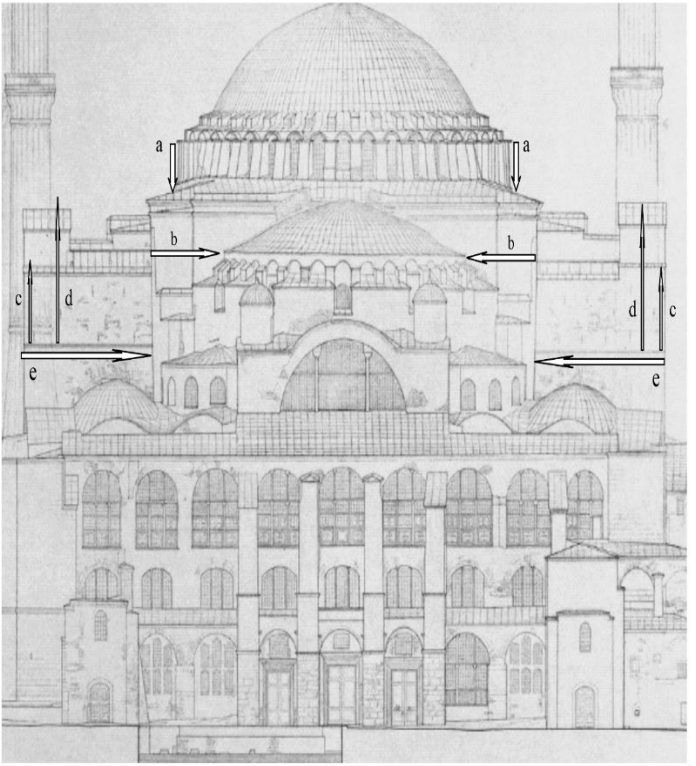

*fig.*24: *Hagia Sophia. we*st elevation (after Van Nice)

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I have been unable to find a satisfactory photograph as a substitute.

Hagia Sophia south elevation The asymmetries on the south elevation, including the dome above the façade, are bold and (one might think) inescapable. We start with the windows in the great arch of the tympanum (*frontispiece*). Horizontal lines I have superimposed show that in both rows the tops and bottoms of the windows (paired from the outermost) are at different heights. The superimposed arrows show that the distances of most paired windows from those adjoining them vary irregularly, as do the distances between the outermost windows and the line of the arc. The saucer-shaped object on the right, in the foreground, is taller than that on the left.

I have superimposed a vertical line on *fig.* 25 (page 87) to denote the structure's central axis, on which all the horizontal lines are centered. Lines 6 to 9 fall notably short of the left-hand edge of the structure, and lines 10 and 11 appear to extend slightly beyond it. The great dome, therefore, is not centered on the tambour on which it seems to rest, but is noticeably to the right of it. I have not seen this extraordinary instance of asymmetry mentioned previously.

But it is the southern perspective on the dome (*fig.* 26 page 88) that is particularly striking for its asymmetry. The uppermost ring, "A", is taller on the left than on the right. The undesignated ring below it is taller on the right than on the left, as is the ring "B", whose right edge is vertical, while the left edge has a pronounced slope that leads to a vertical drop. The ring "C", is lower on the right than on the left, and much of it is obscured by an irregular arrangement that rises to a peak near the left and then tapers erratically off to the right. More striking still are the differences between the half-domes ("D") below the great dome. That on the left is shallower and has a more angular profile than the one on the

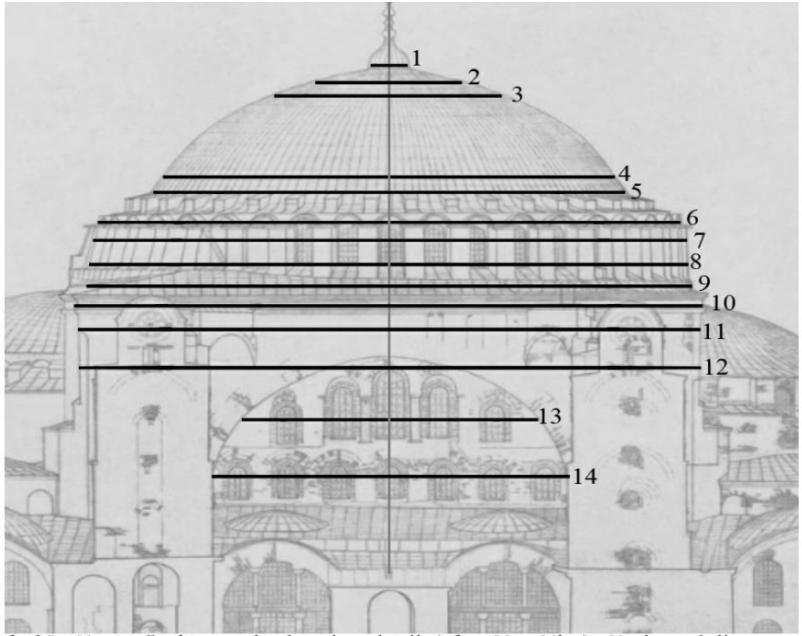

*fig.*25: *Hagia Sophia* south elevation detail (after Van Nice). Horizontal lines are centered on the vertical axis, showing that in the three rows of windows (6-8;13,14), the middle window is off-center, and that the base of the dome (6-9), is also off-center.

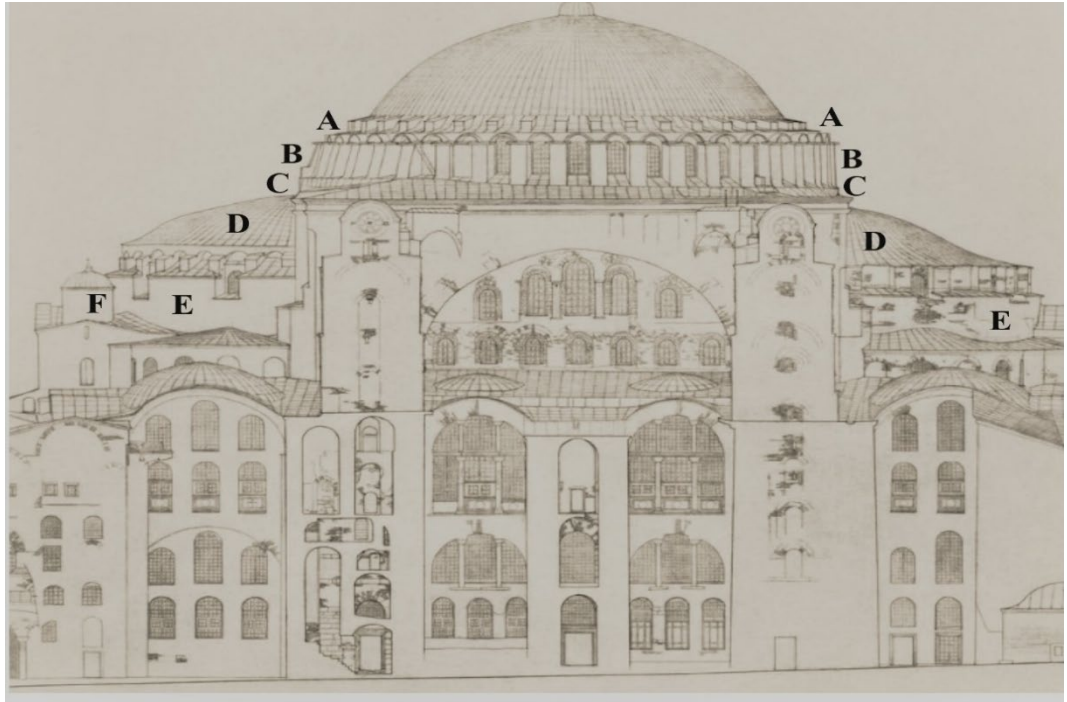

*fig.*26: *Hagia Sophia* south elevation (after Van Nice)

right; the base of the one on the left is higher up than the one on the right t. The (unmarked) walls from which the half-domes rise also differ, with the one on the left having what seems to be an arcade of windows, which the one on the right seems to lack. The wall ("E") on the left immediately below this structure appears to be taller than the one on the right, and has two recesses; the wall on the right appears to have none. The structure on the left that appears to be surmounted by a silo ("F") is not matched by anything on the right; it may be a later addition. Two tall buttress-like structures rise from the ground to flank the great arch. That on the left is set further in than the other, and is taller. These may be later additions, as I believe the structure in the foreground is, also.

One might well ask: Is there a single symmetric feature on the south front?

***Hagia Sophia* dome plan** The original dome of *Hagia Sophia* collapsed a mere twenty years after it was built, possibly a result of the unequal distribution of loads caused by the dome's asymmetric shape.[10] The present dome is asymmetric, too, but without this evidently causing structural problems. *Fig*. 27 (page 90) shows Van Nice's drawing of the dome in plan. The forty rectangles which run along the circumference of the dome's base are distributed asymmetrically, and also differ in their depths – these are the piers into which are set the windows that so magnificently illuminate the church's interior. I speculate that the variations in their depths, if intentional, were designed to control the amount of sunlight that enters the interior through each window, and the angle at which it does so. It will be seen that Van Nice has drawn a circumference around the figure, but that the outer tips of the eight arrows (which are all the same length), that I have sup-

[10] Ousterhout 2019, pp.92, 210, 685.

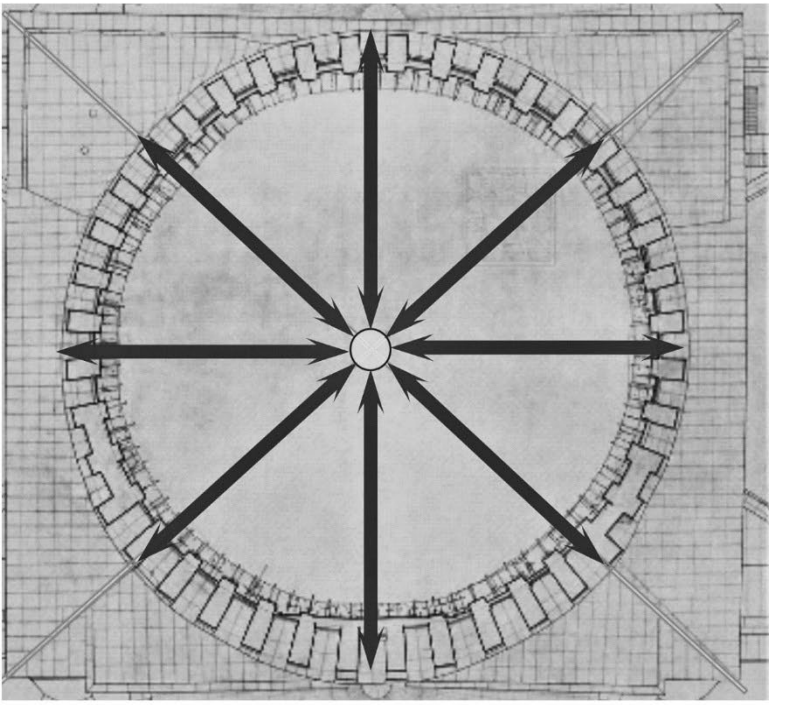

*fig.*27: *Hagia Sophia.*dome plan (after Van Nice)

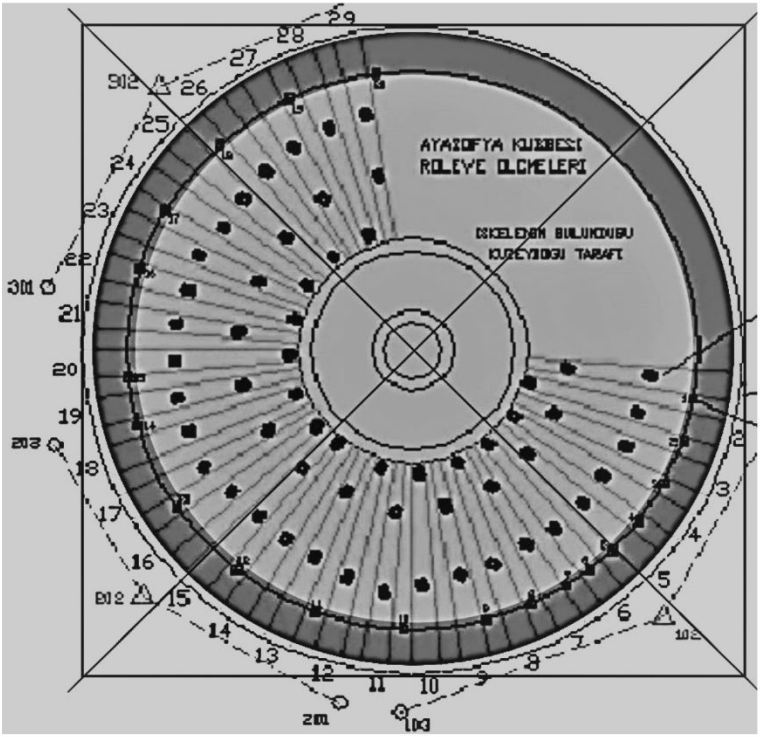

*fig.*28: *Hagia Sophia.*dome photogrammetric image with overlays

erimposed on the plan vary in their proximity to this circumference. In other words – the perimeter of the dome is not a true circle but an irregular ellipse – it too is asymmetric.[11] (The piers too vary in their proximity to the circumference.)

***Hagia Sophia* dome (photogrammetric image[12]** (*fig.* 28, page 91). The area left blank in this image could not be surveyed because scaffolding for repair work on the dome was still in place. The rectangle enclosing the entire image and the diagonals crossing it were drawn by me to locate the center of the dome.) The two pairs of rings in the center of the image denote the interior of the cupola, and delineate its somewhat ragged circumferences.

I have superimposed two circular shaded areas, both centered on the dome itself, each of which approaches the outer perimeters of the dome recorded by photogrammetry. Each of those perimeters is indicated by a ragged black line. The inner circle – a true circle – comes close to the perimeter at points 2 to 5, and 26 to 29; it seems to be furthest from it at points 15 to 23. The outer circle, also a true circle, comes close to the perimeter at points 28 to 29, and perhaps is furthest from it at points 15 to 17 (though that is not entirely clear). The photogrammetric image, then, with my shaded circles superimposed, also shows that the dome of *Hagia Sophia* is asymmetric.

Hagia Sophia dome profiles The exterior profile of the great dome as seen from the south is also asymmetric. I demonstrate this through the two images below (*figs.* 29a and b, page 93). In the first, (29a), rows of arrows extend from the center of the image to the right and left edges. The two arrows

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[11] "The dome rests on an irregular base, with the distortions rendering it slightly oval in plan", Osterhout, *op.cit.,* p.210.

[12]source:https://www.isprs.org/proceedings/xxxiii/congress/part5/172_xxxiii-part5.pdf

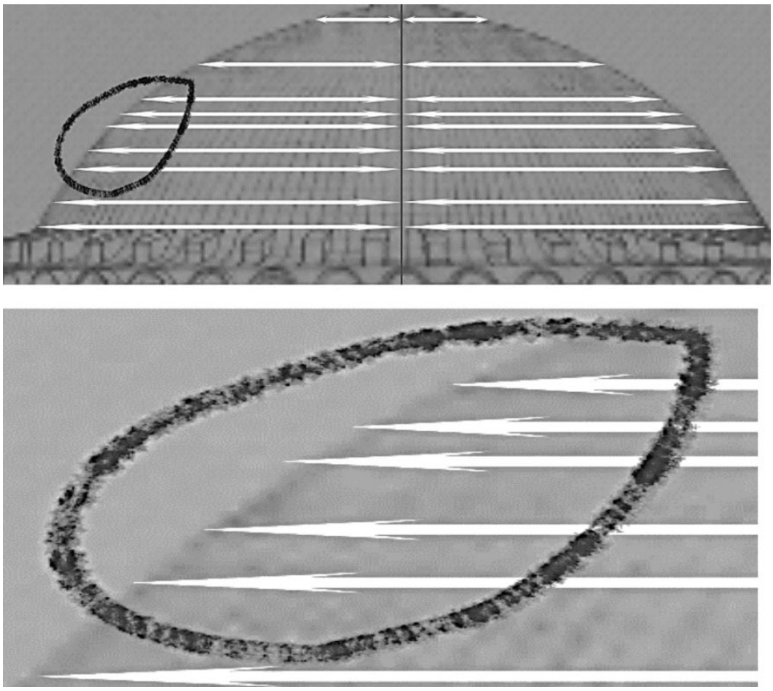

fig. 29 *a and b:* Hagia Sophia dome south elevation
(after Van Nice)

in each row are of identical length. If the tips of all arrows touch the edges of the image, the structure is symmetric. Failing that, the structure is asymmetric. An enlargement (29b) of the segment within the black circle shows that four arrows extend beyond the left-hand edge (their equivalents on the other side of the center line, to repeat, reach no further than the right-hand edge of the dome). The southern profile of the great dome is therefore asymmetric.

The profile (*figs.* 30a and b, page 95) of the great dome as seen from the east is also asymmetric.

However, the profile of the dome from the west (figs. 31a and b, page 96) is symmetric.

Were these irregularities – these asymmetries – planned by the architects who designed the building, and if so, what was their purpose: do they perhaps manifest cultural or artistic or theological values that we know nothing about? Or are they perhaps deviations from the plans for the structure, possibly caused by careless or incompetent craftsmen? If so, were they detected (a pertinent question, since almost no one nowadays seems to notice them); and, if they *were* detected, have they remained in place because they were not considered worth correcting? Or again, if they were not planned, is it possible that they are a consequence of earthquakes, or of load stresses over a long period of time? And what are we to make of the fact that none of the classic descriptions of *Hagia Sophia*, such as those by Procopius or Paul the Silentiary, or Agathias, refer to the dome's asymmetry, which is particularly evident when it is seen from the south?

I do not know how to answer such questions. Suffice it for now to point out that the material we have considered in this chapter so far must surely dispel any notion that Byzantine art and architecture were "always" symmetric!

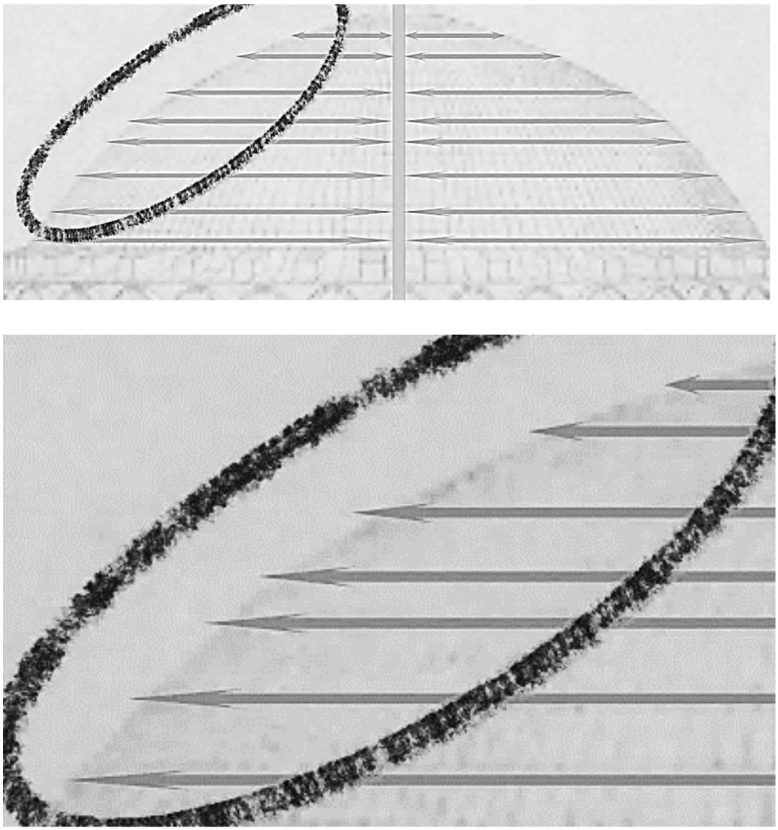

fig. 30 *a and b:* Hagia Sophia dome east elevation
(after Van Nice)

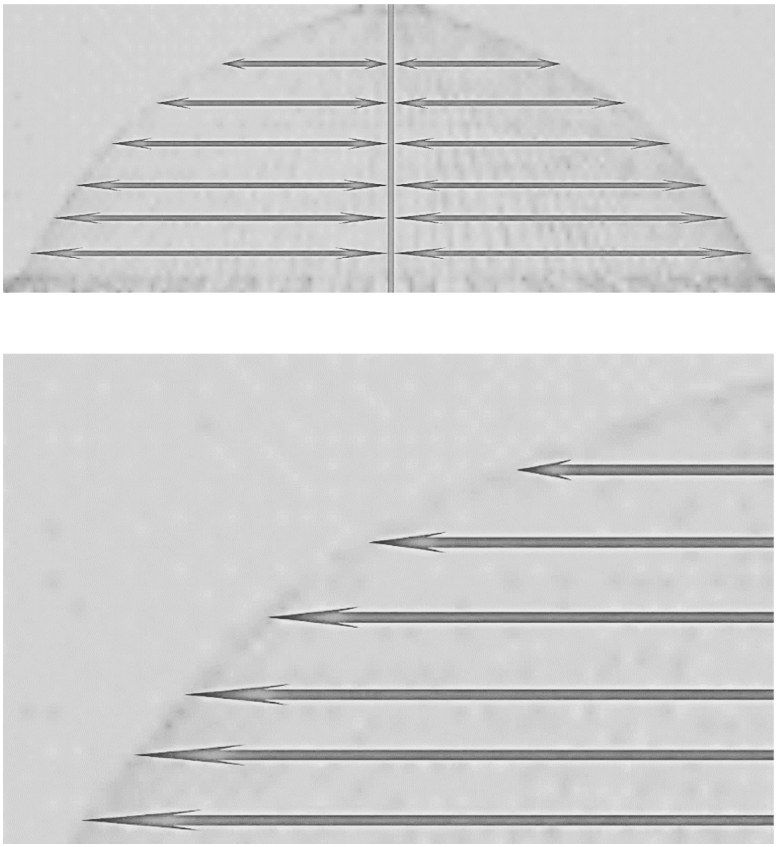

fig.31 a and b: *Hagia Sophia* dome west elevation
(after Van Nice)

***Hagia Sophia* interior** Asymmetries abound in the interior of *Hagia Sophia*. "The interior vistas curve in strange ways", Mango writes; "the columns are of different sizes and proportions; the upper order has consciously been made not to line up with the lower…"[13]

Fig. 32 (page 98) shows part of the ceiling of the inner narthex. It will be seen that the eight-pointed stars (?) differ in their placement and size from each other (as do many opposing objects attached to each of the eight points). This design is repeated, in erratically varying, asymmetric configurations, along the entire length of the narthex ceiling.

Fig. 33 (page 99) shows the decorations on the ribs of the great dome. My impression is that these are pre-Islamic, or Byzantine, designs. The irregular spacing of the designs along each rib will at once be obvious.

Fig. 34 (page 100) shows some of the revetments in the interior, these embellished with bronze decorations. The column of panels on the left is wider than that on the right, though in each column the lowest panel is narrower than the two above it, and is aligned with the interior of each column. The bronze decorations on the lower panels are different from each other – even if they are *somewhat* similar – and although both sets have a strong bilateral quality, each of them is in fact asymmetric. Note too the irregular, asymmetric, shapes of the stars in the railing at the top of the picture.

Fig. 35 (page 101) shows an arrangement of three pairs of doors. Each door in the outer pairs, which are of marble, has a column of five horizontal rectangles, into which are set what appear to be panels of marble. The panels vary greatly in size, particularly on the doors on the right, some of which are low in height and at least four of which

[13] Mango 1980, p.262.

*fig.*32: *Hagia Sophia,* inner narthex ceiling decoration

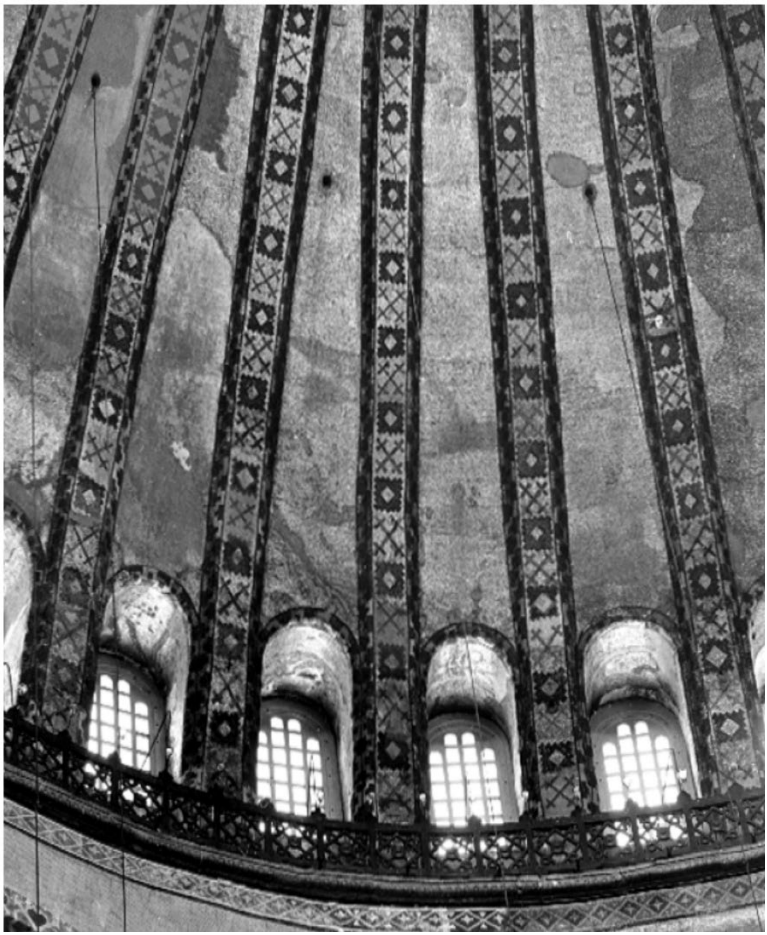

*fig.*33: *Hagia Sophia* dome rib decorations

fig.34: *Hagia Sophia* revetments with bronze embellishments

*fig.*35: *Hagia Sophia* - the marble doors

appear to have reliefs carved on them. The panels are set at different levels, with those on the right being higher – as are the handles (whose placement differs even on each pair of doors). The doors on the left are wider than the pair on the right. The doors in the center are, of course, not in the center of the assemblage but, because of the wider doors on the left, off to the right. Although quite irregular, the framing around the outer pairs of doors, and around each panel, and other decorative details (such as the boss above and on each side of every panel) give the assemblage a certain degree of unity. Nevertheless, it is obvious that the designer of these doors had no intention to make them uniform. (Note too the upper middle window on the far wall seen through the open door. It has three panels on one side and four on the other.)

This survey of *Hagia Sophia* has established that, far from being "essentially symmetrical", it has some symmetric features but is, nevertheless, preponderantly asymmetric.

We turn now to some other examples of Byzantine architecture.

Istanbul: *Hagia Irene* Before the construction of *Hagia Sophia*, *Hagia Irene* was the principal church of Constantinople. Built originally by Constantine, it was destroyed during the Nika riots of 532, rebuilt by Justinian, and then rebuilt again by Constantine V (d. 775) after it was severely damaged in the earthquake of 740. The large cross (*fig.* 36, page 103) that is the sole decoration of the apse is an expression of Constantine V's fervent iconoclasm. It is asymmetric with, for example, the outer end of the right (facing) arm being considerably longer than that of the left arm; the flanges at the top and bottom of the cross are asymmetric, and the bottom of the cross is not aligned with the step-like base on which it rests, and that base extends further to our left than to the right.

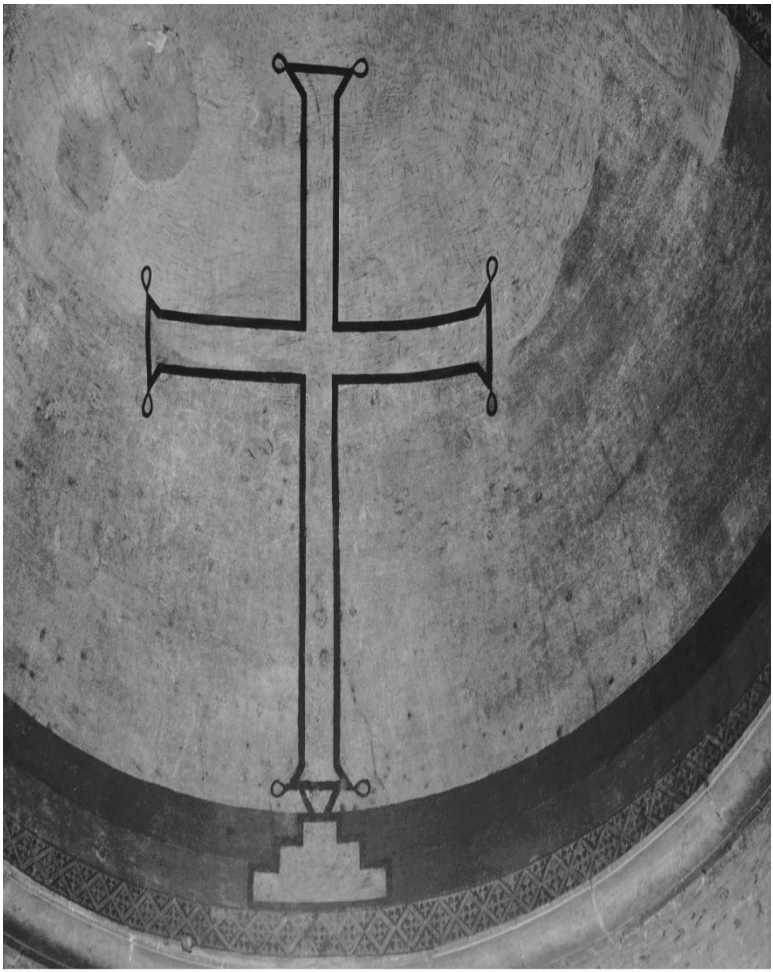

*fig.*36: Istanbul: *Hagia Eirene.* Mosaic crucifix in apse

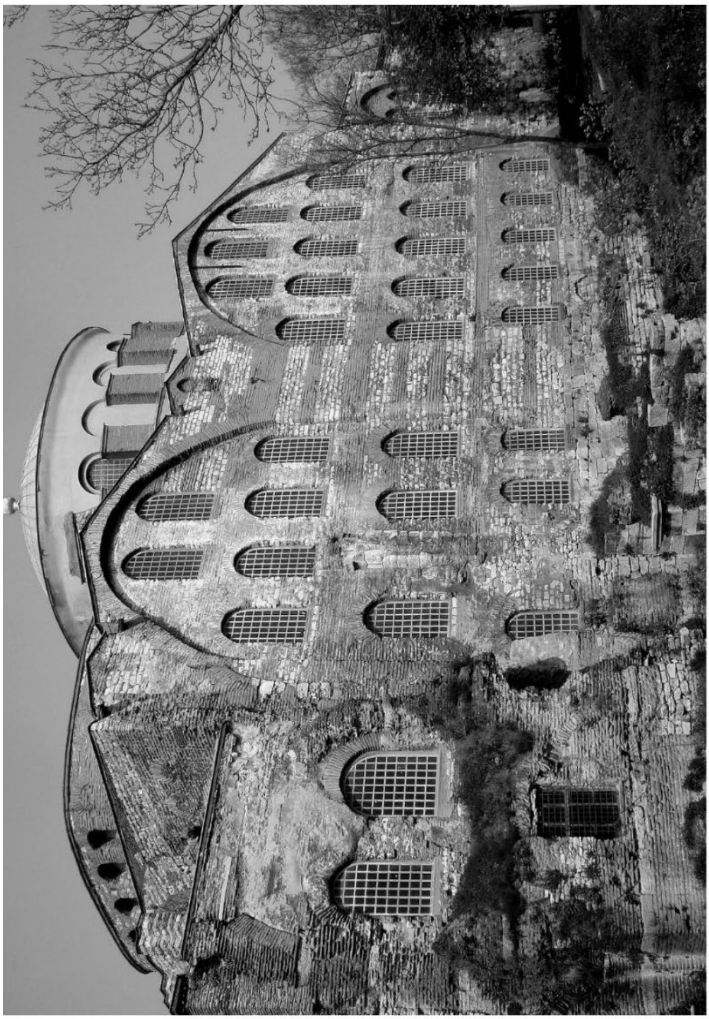

fig.37: Istanbul: *Hagia Eirene.* North face

*fig.*38a: Istanbul: *Hagia Eirene.* Asymmetric window placement

*fig.*38b: Istanbul: *Hagia Eirene.* Asymmetric window placement

The exterior of the church is markedly asymmetric. Note the discrepant number of windows within the two arched segments of the north face of the church (*fig.* 37, page 104). The top two rows of the section nearer us have two and four windows, respectively, while those in the next section have three and five windows.

Fig 38a (page 105) shows the top two rows of windows of the nearer section – the ones with two and four windows, respectively – from the inside. These two rows are asymmetrically placed, with both being much closer to the arch on the left than they are on the right. (It would appear that the two rows of windows below these, when viewed from outside, are set closer to the right than to the left.) The upper row, moreover, is not centered on the windows below it. This, then, is a doubled asymmetry: the arrangement of windows is asymmetric on both the exterior and interior walls. Then, moving across to the other exterior arched segment – the one with three windows on the top row – we see (*fig.* 38b, page 105) that on the interior, these three windows are also asymmetrically placed; the arrows I have superimposed on the image shows that the windows are closer to the left side of the arch than they are to the right.

Ravenna: Mausoleum of Galla Placidia Galla Placidia (d.450 CE) was the daughter, wife and mother of Roman emperors, and a powerful figure in her own right. The stolid, even drab-seeming, mausoleum named for her (though her actual tomb is in Rome) can easily be mistaken for a symmetric structure (*fig.* 39, page 107).

Fig. 40 (page 107) shows the plan of the so-called mausoleum. I have superimposed on it two shaded right-angled figures, whose incongruity with the actual walls that surround them will make the asymmetry of the narthex and of the nave immediately apparent. Comparison of the two

*fig.*39: Ravenna, mausoleum of Galla Placidia

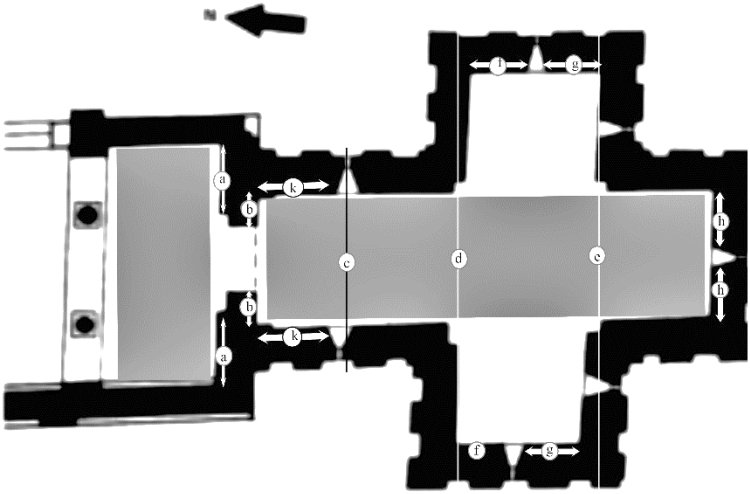

*fig.*40: Ravenna, mausoleum of Galla Placidia, plan

arrows marked “a”, and comparison of the two arrows marked “b”, shows that the entrance from the narthex to the nave is not centered on either area. Line “c” establishes that the windows on the east and west walls of the nave are not directly opposite each other, while the two arrows marked “k” show (perhaps superfluously) that the two windows are not equally distant from the north wall of the nave. Lines “d” and “e” show that the east and west transepts are not aligned with each other, and that the east transept is considerably wider than that of the west. Although this is not indicated by superimposed lines or arrows, in the west transept the north wall is longer than the south wall. Also in the transepts, the arrows “f” and “g” show that the windows are not centered on the east and west – end – walls that they pierce. The arrows marked “h” similarly show that the window on the south wall, too, is not centered.

Many of these irregularities have a tilt down to the right. Possibly these are not original to the structure, but were caused by earthquakes, which are common in the region. But natural forces cannot account for other asymmetries indicated on the plan. Natural forces will not make one of a pair of walls longer than the other – as we find in the “a” walls, nor will they explain why *all* the windows of the mausoleum are off-center. We must assume that these asymmetries, at least, are original to the structure; and this assumption will be strengthened as we turn next to examining one of the decorations on the mausoleum’s interior walls.

A window sits astride the center of an arched wall inside the mausoleum (*fig.*41). The position of the two figures relative to the window is quite different, and the asymmetric oil lamp (?) is not centered under the window. The curious wing-like design that extends from the top of the window to

the decorative frame of the arch is *not* centered on the window but rather to the right of it. The necklace-like design at the top of the "wing" is also off to the right. Most strikingly, however, is the fact that the number of spine-like features on the "wing" are arranged asymmetrically, with five on the left but six on the right. The ones on the right, moreover, are painted more boldly, so that one can follow their lines almost to the top of the wing, which one cannot do as easily with those on the left.

Ravenna: San Vitale Two figures stand on either side of Jesus in San Vitale's splendid apse mosaic shown in *fig.* 42, page 111. The one on the far right, unlike his opposite number, has not a halo; the angel on the left stands closer to Jesus than the angel on the right. The unusual crossed-cornucopia (?) motif that spans a broad band inside the arch are pointed toward a circle made up of rings of different colors; a cross, centered on a floral device is contained within that ring. The ring itself is off-center *vis à vis* the cornucopia series, as are the elements within it. However, the ring appears to be centered directly above the head of Jesus. Off to one side of the feet of the two outermost figures is an arrangement of four white discs (perhaps, flowers?) Because the figure to our right is further in from the rim of the apse, the discs extending from approximately his ankle are arranged in a straight line. The outermost figure on the left side, however, is standing closer to the rim and there is not enough room for a straight row of four discs. They are therefore arranged in a space-saving curve. I will also mention that the green band at almost the outer rim of the apse is decorated, among other things, with a series of yellow disks that are carry an undecipherable adornment at their center. There are seven such discs on the left, but six on the right, and the series is not

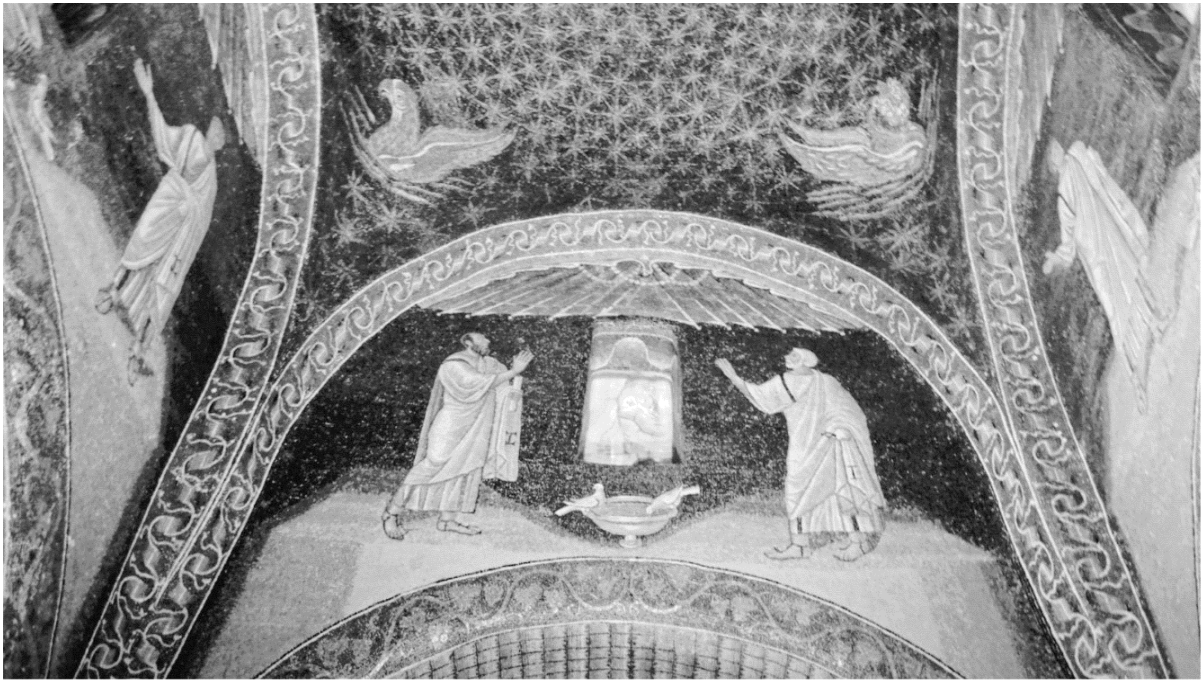

fig 41: Ravenna, mausoleum of Galla Placidia interior mural

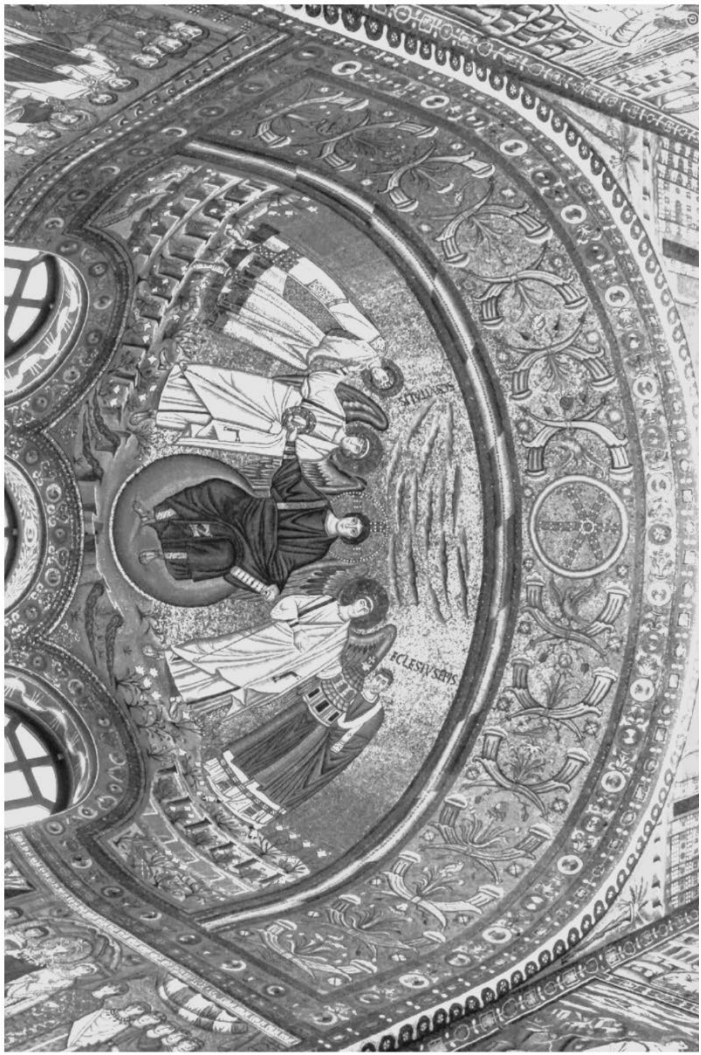

fig 42: Ravenna,San Vitale, apse.

centered on the large ring of the band below it.[14]

Of still greater interest for their asymmetry are the famous portraits of Justinian and Theodora – emperor and empress – and their retinues, which occupy a deep band at the lower level of the apse, and on either side of the three apsidal windows (*figs*.43 and 44, pages 113 and 114).

More retainers attend Justinian than Theodora, and they are closer to the front, than in Theodora's panel. In Justinian's panel, a number of figures are as tall or taller than he, while Theodora is the tallest in her group. I will not belabor the point that each panel is itself asymmetric, with Justinian having four figures on his left and at least seven on his right. Theodora has seven on her left and two on her right. The canopy on the right of her panel is not matched on the other side, just as the doorway, curtain and (?) fountain on the left of her panel is not matched on the other side. Despite their formal, stiff, quality, we are never in doubt that these are portraits of real people, and part of the reason for this is that the imperial solemnity with which they are depicted is countered by the asymmetry that permeates both panels.

Kitzinger, too, has recognized the important function of asymmetry in these compositions. "Subtle asymmetries", he writes, "enhance the effect of intense animation… all features are contained within a clear geometric frame… but there are subtle asymmetries to offset the regularity of the design. The result is a portrayal of overwhelming power, imperturbably timeless yet entirely real, individual and alive".[15]

The panels are also asymmetric *vis à vis* each other, in the sense that Justinian stands much closer to the middle of his panel than Theodora, who is well off to the left of center.

For now, however, I wish to focus the reader's attent-

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[14] Kitzinger 1977, p.85, errs, I think, in saying that in this composition "the arrangement of the figures is formal and symmetric".

[15] *Ibid.,* pp.93-4.

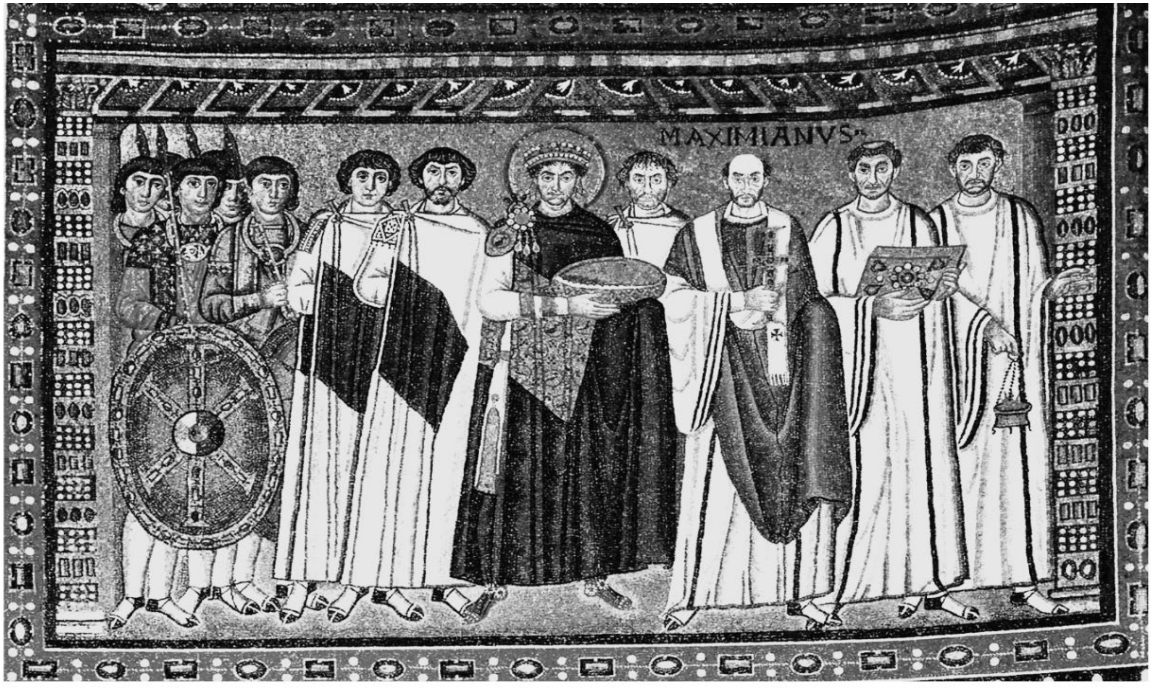

fig 43: Ravenna,San Vitale, Emperor Justinian and retinue

fig 44: Ravenna,San Vitale, Emperor Justinian and retinue

ion on a small but significant detail that often seems (and may well have been intended) to escape – conscious – notice. In the border above the heads of Justinian and his companions is a row of parallelograms, with those on the left leaning to the right and those on the right leaning to the left. They meet at a pseudo-center that is noticeably to the right of Justinian, and they vary noticeably in size. Remarkably, the number of parallelograms on either side of the row, differs, with nine on the left and eight on the right. The row, in other words, is asymmetric. The borders on the two sides of the panel are also asymmetric. The decoration within these borders consists of rectangles containing three rows of four white jewel-like discs, and rows of three vertical dark-green rectangles. The left-hand border contains ten and nine of these decorations, respectively; while the right-hand border contains nine of each, which are noticeably larger than those on the other side. The borders of the Theodora panel are made up of eight and seven of these *motifs* on one side, and eight each on the other.

Very great importance must have been attached to these panels because of their subjects and their location. The finest materials and the most skilled artisans must have been employed in their execution. We can therefore be confident that the irregularities in the borders to which I have pointed are not evidence of carelessness or ineptitude: these are not makeshifts. They indicate rather, that even at the highest levels of Byzantine society, there was an easy acceptance of what we today call asymmetry, but which they took so much for granted that they may not even have had a term for it.

Istanbul: the former church of Saints Sergius and Bacchus
The church was built in the middle of the 6th century, but has been extensively modernized, and now serves as a mosque. However, many architectural and decorative details have survived from its former state. The layout of the interior is

perplexing (*fig.* 46, page 118). "The center space", Krautheimer writes, "at first easily understood, loses its clarity when viewed from the ambulatory and galleries … [which draw the eye] … into rooms whose relation to the center remains unintelligible … No attempt has been made to counter the irregularity of the site, and even the seemingly regular octagon of the piers has sides of different lengths".[16]

Some of the details we see in *fig.* 46 – the chandeliers, the cartouches with Arabic inscriptions – are of course not part of the ancient Christian church. Others sure are. The cornice that runs along the wall just below the (?) dome is, in our picture, surmounted by five windows. The window on the extreme left sits well above that cornice; the window next to it is slightly above the cornice, while each of the three windows to *its* right have their bottom cut off – though to a different extent in each window, by the top of an arch. The arch on the left fails to reach the cornice, the arch next to it either comes right up to the cornice or (the picture is not clear) extends just slightly beyond it. The other arches extend above the cornice, but by different amounts.[17]Islamic architecture typically adheres rigidly to the constraints of symmetry, and also typically does not engage in the kind of playfulness we see here in the relations between arches, cornice and windows. I am quite confident therefore that the asymmetry we have noted here was not introduced by Islamic architects after 1453 but may be as old as the church itself.

The carvings on the exquisite capital on the marble column shown in *fig.* 45 (page 117) resemble but do not mirror each other across the central divide. Its scheme therefore

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[16] Krautheimer 1986, p.223. Comp. Ousterhout 2019, p.189, who attributes the structure's "irregularities" to technical difficulties associated with the site, "that is to say, the architect made the best of a difficult situation".

[17] The cartouches between the windows are asymmetrically shaped and placed. Their asymmetry suggests that they may be Byzantine, and that the Arabic inscriptions they contain are later additions.

fig 45: Istanbul, former church of Ss. Bacchus and Sergius

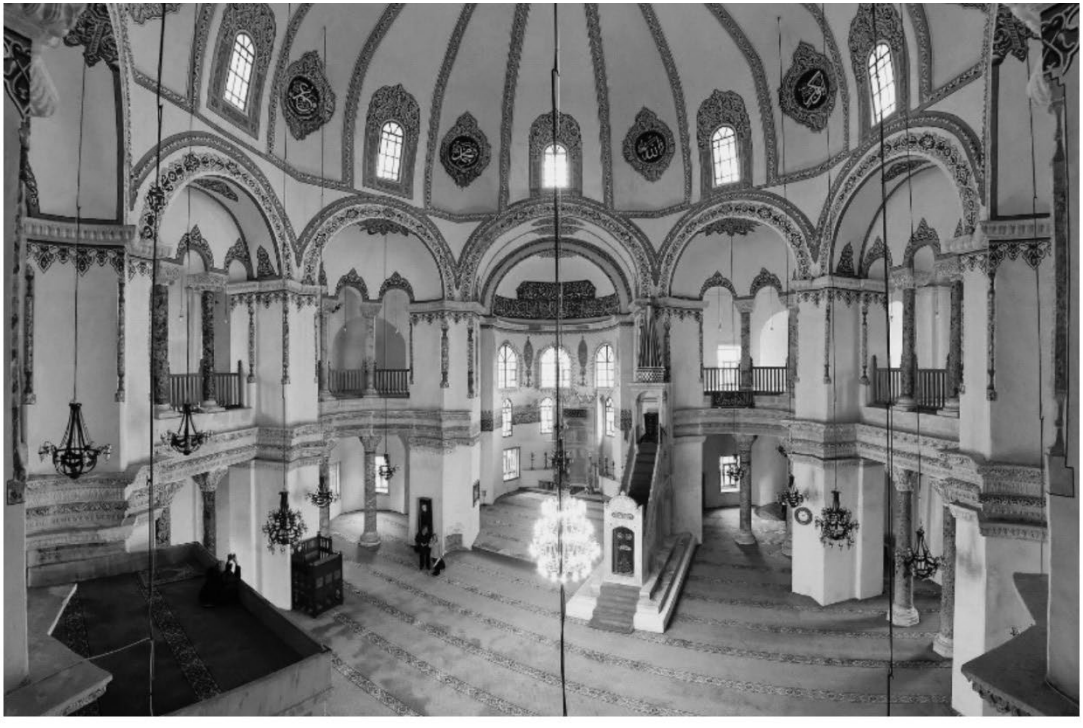

fig 46: Istanbul, former church of Ss. Bacchus and Sergius

is subtly asymmetric, and is echoed on many of the other early capitals of the former church. It will be seen that the capital and pillar are not centered on the architrave they support. The panel to the left of the capital is uncentered and abuts the edge of the capital while leaving a sizable space blank at its other end. The carvings within the panel are asymmetric. The short side of the triangle in the upper left-hand corner is longer than the short side of the triangle in the lower left-hand corner. The wheel-like device in each of the two panels on the right are identical, but the motifs in each of the four corners of the panels differ from one another, so that the panels have both symmetric and asymmetric designs.

Finally, we turn our attention to a small and briefly-described miscellany of buildings**.**

Istanbul: Palace of the Porphyrogenitus (13th century). The building *figs.* 47, page 120) has recently been restored, with its essential features (among them its pervasive asymmetry) carefully preserved. Notwithstanding my strictures about restorations, (chapter 4), it was clearly possible to know a great deal about the original appearance of this palace, and one can be confident, I believe, that this is indeed a more or less accurate restoration (though I have my doubts about the window frames that have been set in to the upper floor. They look jarringly inauthentic.) Of course, having been "restored", the building has lost all memory of its past. It is no longer an ancient building. Perhaps in a few centuries it will become one again.

Thessalonica: Church of Panagia Chalkeon ("The All-Holy Lady of the Coppersmiths"). Built in the early 11th century. During the Muslim occupation of Thessalonica – 1430-1912 – the church was used as a mosque. Extensively restored in 1934 after a major earthquake (*figs.* 48 a and b, page 121).

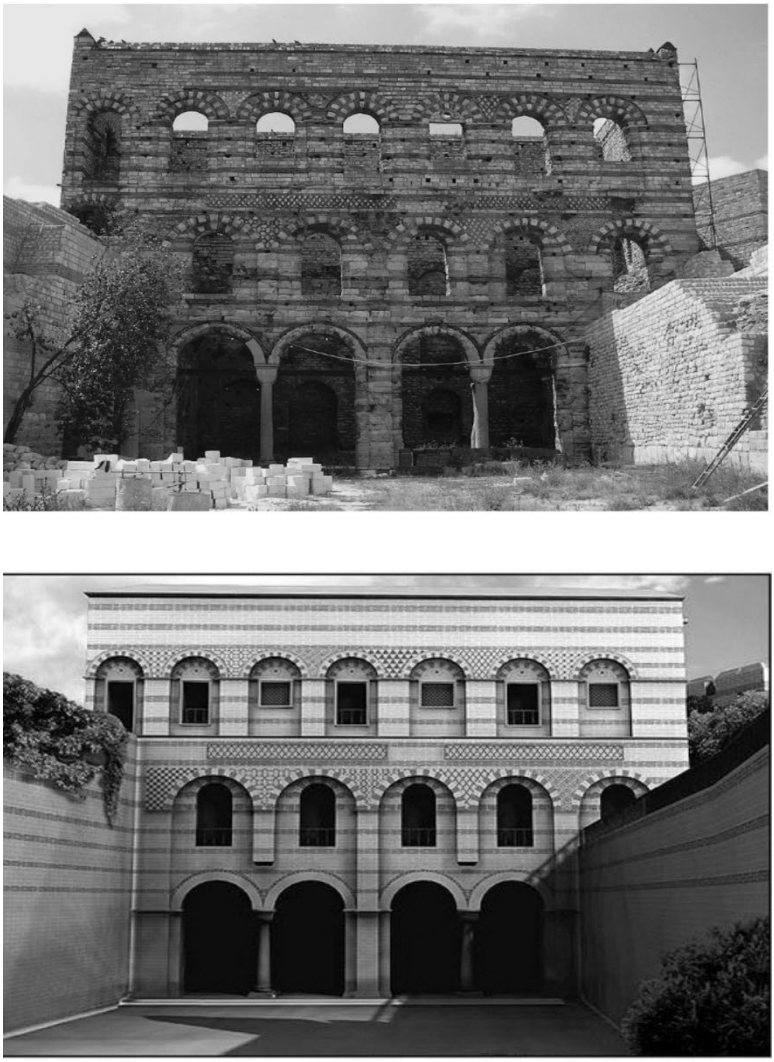

fig 47: Istanbul, palace of Porphyrogenesis,
before and after recent restoration

fig 48 a and b: Thessalonika, Church of Panagia Chalkeon

fig 49: Istanbul, Parakklesion of Pammakaristos Church

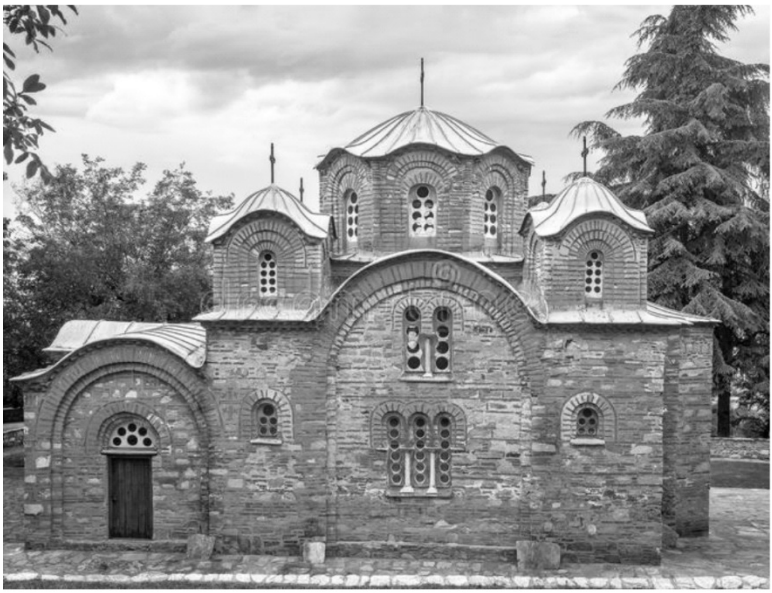

fig 50 a and b: Gorno Nerezi , Church of St. Panteleimon

Istanbul: Parakklesion of the Pammakaristos Church. The Parakklesion, or chapel, was built in 1340 onto the Pammakaristos church of the 11th or 12th centuries. The church is now a mosque; the chapel, a museum (*fig.*49, page 122)

Gorno Nerezi (North Macedonia): the Church of St Panteleimon, part of a monastery of the same name, was built in 1164. One face of the church (fig. 50a, page 123), including the two turrets, is asymmetric; another, however, (fig. 50b) is symmetric, and the door at its end (i.e., part of the structure we see on the left in fig.50a) is symmetrically set (as it would seem are the windows of the dome).

Conclusion The little monastic church of St Panteleimon in rural North Macedonia has one face that is symmetric and another that is asymmetric. At the other end of the scale in terms of grandeur and importance, we have seen that *Hagia Sophia*, too, while predominantly asymmetric, also has elements that are symmetric. We do not know the considerations that led to the selection of the one in one part of a building and to the selection of the other in another part of it. We may however assume that the combination of symmetry and asymmetry in a single structure did not come about through carelessness, or by default, or because builders were oblivious to the distinction between the two.

The simultaneous presence of symmetric and asymmetric elements in a single structure would have been unthinkable in the west's Renaissance. The concept of symmetry that emerged in Italy in the middle of the fifteenth century had embedded in it very strongly-held (and generally erroneous) beliefs about beauty, history, science,and truth, which led its advocates to assert that symmetric design was normative and imperative, and that any deviation from it was unacceptable. The concept rapidly became an orthodoxy – one could say, even an ideology - that few would challenge,

or even moderate; its principles were scrupulously and sometimes ruthlessly[18] implemented in practice.

Not so in Byzantium, however. There, as we have seen, there existed some rudimentary awareness of the idea, and perhaps even of the concept, of symmetry. But that awareness seems to have been intermittent, not formulaic, and far from insistent. Symmetric design, where it was – *perhaps!* - recognized as such, was appreciated, but there is little evidence (except, possibly, that provided by Nicetas on Paros) that it ever ranked high in the Byzantine aesthetic scheme, let alone that it was regarded as indispensable in the design of a building: still less that its presence was thought inconsistent with asymmetric elements in the same structure.

If symmetry and asymmetry cohabited tranquilly in Byzantium, it was because people, to the probably limited extent that they were even aware of the distinction, treated the choice between the two as a casual and inconsequential one. The two were never regarded as antithetical as they would be in the Latin West, and no one can ever have thought, as would become a commonplace in the West, that nothing could be beautiful unless it were symmetric. Thus, no passionately-held philosophical or theological dogmas – no doctrines of surpassing importance - were at stake in the choice between symmetry and asymmetry; no principles were jeopardized, no imperatives were disavowed, no animosities were aroused, by adopting one rather than the other: or by adopting both, as was frequently done, even in a single structure, no matter how modest or grand it might be. (Note how, in appreciating the symmetry of the columns in St. Sergius,

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[18] In the 62nd chapter of his *Seventh Book,* Serlio tells the story of a prince who, made nauseous (literally!) by an asymmetric *palazzo* in his town, threatened its owner to have it demolished if he didn't rebuild it forthwith to conform to acceptable architectural standards. See *Fallacies,* chap.6, and *fig*.6.1.

Choricius gave no hint at all of deprecating the absence of symmetry in the other parts of the church.)

However, I do not overstate the case, I believe, when I say that asymmetry is found more often than symmetry in Byzantine art and architecture.

To be sure, we know of one occasion when the choice between symmetry and asymmetry seemed to involve important issues, and even entailed the assertion that the one was correct and that the other incorrect. The episode concerned the poet and historian Agathias, who died around the year 580 C.E. Agathias had been disturbed by the "unevenness" of the space between certain arches in *Hagia Sophia*. He was much gratified, therefore, to note that when the great dome, which had collapsed, was being rebuilt (558-562 C.E.), modifications were made so that the arches would "agree more closely with the others" and, "by reducing the unevenness of the space between them", would bring about the "harmony" of a "more even and well-curved figure that conformed to the [appropriate geometric] figure".[19]

We would say that Agathias was pleased that the earlier asymmetry, which he found regrettable, was being eliminated or at least diminished. In this, he was not merely voicing a matter of subjective taste; his comments expressed a normative principle that shapes *should* "agree" with each other, that they *should* conform to appropriate geometric figures, and that the spaces between them *should not* be "uneven". Yet even here we are impressed by the undogmatic

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[19] Agathias, *Hist.* V, 9, 2-5. (Trans Mango, 1972, p. 78). Mathew (1963, p.93) renders this as "…he made the equilateral symmetry more perfect", but this is, at best, a paraphrase of the original text, in which the word "symmetry" does not occur.

nature of Agathias' preference. He wanted the arches to agree "more closely"; he did not demand that they mirror each other. He wanted the unevenness of the space between them to be "reduced"; he did not demand that it be eliminated. He wanted "more even" figures; he did not demand that they be perfectly regular. If his remarks possibly indicate some awareness of the *idea* of symmetry – note that he did not use the term - they were still a distance from the *concept* of it. We do not hear in them the shrill tones of Renaissance polemic.

Moreover, we can be confident that the changes that pleased Agathias were not made to appease anyone's aesthetic sensibilities but for reasons of structural engineering – that is, to correct the flaws that had led to the earlier dome's collapse.

These changes are the sole instance known to me of anything like an attempt to "correct" the asymmetry of a Byzantine building. It bears repeating that the impetus behind these changes, for all Agathias' appreciation of them, was not aesthetic and ideological – as would so often be the case in Italy during and ever since the Renaissance – but the purely practical one of ensuring the structural stability of the dome.

In Chapter One I discussed briefly how aversion to asymmetry so often leads otherwise perfectly sensible people to see asymmetric forms as symmetric or, in a variety of ways, to dismiss their asymmetry as unintended. We see this reaction with regard to the asymmetries of *Hagia Sophia*. Van Nice, who spent a large part of his life measuring the structure, claimed that it was "essentially symmetrical": which is to say, that its asymmetries were unessential, and not worth

recording and studying.[20] We have to ask how much of the whole huge structure would be left if the "unessential" parts of it were stripped away? What would remain if – for example - the entire "unessential" asymmetries of the South front were eliminated?

A more subtle reaction to the *Hagia Sophia*'s asymmetries is that of William Macdonald. He starts out, by characterizing, very justly, as "one almost universal failing" of students of architecture and history, their "cavalier plans and sections which suppress the very significant sketch-like irregularities of the structure and give an erroneous precision and clarity to its angles and surfaces". However, he then falls back on some of the other forms of denial that we identified in Chapter One. Question-beggingly, he calls the structure's irregularities "deformations" – departures, that is, from the intended forms - and attributes them to such factors as hasty construction and later repairs, the damage done by

[20] Writing about the 10th-century Myrelaion church in Istanbul, Striker, (1981, p.16), states that its "regular, bilaterally symmetrical form", as well as its small size, "make it possible to reconstruct its original form with considerable accuracy". Has Striker, in this remark, unwittingly disclosed a reason– an unconscious reason, of course – for seeing an asymmetric structure as symmetric? A symmetric structure, after all, is much more easily understood and explained than an asymmetric one. Its "reconstruction", therefore, is a less challenging task, and the result more confidently validated, necessitating nothing more than the duplication on one side of the mirrored version of what you have found on the other. So simple! So certain! (This is precisely the principle implemented in the "reconstruction" of the *Ara Pacis*, on which "lost parts have been replaced with casts taken from corresponding originals symmetrically placed on the opposite side": Orietta Rossini, *Ara Pacis* [2007], p. 82.) The photographs published by Striker do not make the shape of much of the church evident, and his drawn "reconstructions", like most such, are unconvincing: but plate 38 is a photograph that gives a good view of the church's south façade and allows no room for doubt that this part of the structure, at least, is asymmetric!

earthquakes and weather, and rule-of-thumb methods of building.

Mercifully, however, he then retreats from these shopworn explanations and ends with this profound and pleasing coda: "These deviations bring a special quality of grace to a building *which is not and was not intended to be* sharply and perfectly finished"! And that of course is the point. The builders of *Hagia Sophia* and other great Byzantine structures sought and achieved that "special quality of grace" which must forever elude buildings that, in their symmetries and other obsessive qualities, are "sharply and perfectly finished".[21]

[21] My emphasis. Macdonald, 1957.

Chapter Six.
"The Perplexing Spectacle"

> *"If one part always answers accurately to another part it is sure to be a bad building; and the greater and more conspicuous the irregularities, the greater the chances are that it is a good one".*
> – John Ruskin (1903-1912, X, 268)

Why did the concept of symmetry not emerge in Byzantium, as it would in Italy around the time of the Fall of Constantinople?

To be sure, we have seen that symmetric elements, predating the Italians' discovery of the symmetry concept by many centuries, are found in some Byzantine buildings, including prominently on the east and west faces of *Hagia Sophia;* and in some Byzantine works of art; we also found one possible literary reference to it, in Choricius' description (page 31, *above*), of a feature in the church in Gaza. But these reflect no more than *some* awareness, a soft and not a sharp awareness, of the *idea* of symmetry; and not at all, I believe, of the *concept* of symmetry. That is to say, they were never the expression of a systematic and forceful structure of beliefs in the superiority of symmetric design; and they coexisted, without tension, without animosity, without polemics, and often in the same object, alongside asymmetric elements. The complete absence (with that one possible, ambiguous, exception) of the topic, let alone of debate about it, in Byzantine literature is very telling. The schism between symmetry and asymmetry that came to the fore in the Italian Renaissance would never sully the aesthetics of Byzantium.[1]

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[1] Christina Pinatsi (2016) goes too far, I think, in arguing that the pavement of the *katholikon* of the *Mega Spelaion* monastery could not be from the Byzantine era because the "absolute symmetry and rigidity" of its design

This difference in this regard between the two cultures has much to do with the fact that 15th century Italians developed a strong, doctrinaire, enthusiasm for visual simplicity – and with it a great aversion to visual complexity. No comparable development took place in Byzantium.

The importance of the concept of simplicity had of course been recognized far earlier. Aristotle had declared that Nature does nothing superfluous; Occam had taught that the simplest explanation of something is most likely to be the correct one; in all three monotheistic religions the concept of Divine Simplicity was explored. Yet it was not until the 15th century that simplicity emerged as an aesthetic imperative.[2] Among the first to proclaim it was Alberti, who declared that the sight of varied objects was acceptable only when they were viewed from so far away that they came to "conform and agree with each other" – that is to say, when their differences could no longer be recognized.[3] His contemporary, Filarete, expressed his preference for forms, above all the circle, which the eye "quickly encompasses … at first glance".[4] Art in all its varieties came to acquire a "high degree of readableness", and perception was "made extremely easy for the spectator".[5] As Lord Kames expressed it in the 18th century, a painting, like a building, "ought to be so simple as to be comprehended in one view".[6] And so the exuberance and seeming disorder of the medieval garden – its

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negated the Byzantine aesthetic, "which consciously sought variety". By that token, some of the greatest Byzantine monuments, foremost among them *Hagia Sophia,* in which (as we have seen) both symmetric and asymmetric forms coexist, could not have been built during the Byzantine era!

[2] For my explanation of its emergence at that time see *Fallacies,* chap.6.

[3] Alberti 1966a, I.9.

[4] Filarete 1965, 59*v*.

[5] Woelfflin 1952, p.260. Comp. Robert Browning's "less is more" (*Andrea del Sarto*) which would be purloined by Van der Rohe.

[6] Kames 1845, pp.159-60.

almost boundless visual complexity - gave way to the instantly decipherable geometries of the Renaissance garden; the ornate facades of medieval buildings, to the sterile clarity of the Palladian villa.

The concept of symmetry depended on, was a sort of correlate of, one might even say was legitimized by, the newfound enthusiasm for simplicity in design. *For symmetry itself is a simplifying device.* No matter how simple a structure might be, having its two lateral halves mirror each other would make it simpler than if those two halves differed. Not at all cynically (I suspect), Montesquieu wrote that the reason symmetry pleases us is that it saves the mind trouble by cutting its work – so to speak – in half.[7]

Such thoughts were profoundly alien to the Byzantine, whose mission was to create a largely undecipherable text that baffled the eye and eluded understanding; that offered no ready or indeed any, explanation of itself; that drew you into its mysteries, almost inextricably, but that *might* reward you with an awareness that you stood before, or within, something transcendent.

Hagia Sophia, Procopius writes, is an inherently "perplexing spectacle". The visitor struggles in vain to understand it. His eye cannot focus on any one detail of the wonders that surround him before it is drawn to another, and then another; his "vision constantly shifts around", as if he no longer controls it; and no matter how hard he concentrates, (with his "eyebrows contracted, as Procopius would have it) he knows that he can never penetrate the mysteries that surround him.[8] It would seem that Choricius had a

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[7] *Oeuvres* (ed. de Plancy, 1825), p.616.

[8] Not every Byzantine approved of this manner of architecture. St Photius of Constantinople (quoted Mango, *op.cit.,* p.186) regarded it as an "error" that, in designing the church of the Virgin of Pharos, the architect had "gathered all kinds of beauty into the same spot", with the result that "the spectator [cannot] enjoy the sight in its purity, … [but] is carried and pulled

somewhat similar reaction to the church in Gaza: "When you enter [the church] you will be staggered by the variety of the spectacle. Eager as you are to see everything at once, you will depart not having seen anything properly…"[9]

Nor was the Byzantine indifference to "readability" manifested only in architecture.

In the eleventh century Michael Psellos understood that the purpose of art was not to make things clear but to bring them to life, in all its elusive complexity. In his *ekphrasis* on a Crucifixion, Psellos wrote appreciatively of the body in the painting, that it is depicted as "neither neat nor graceful, but rather preserves vividness in its irregularity. For Nature has not turned out limbs evenly, as if with a lathe, *but has destroyed perfect regularity …* making some parts of our body flat and others distended". This picture, he went on to say, "seems to be a product, not of art but of nature…. for his veiled limbs are somewhat ambiguous, and the visible parts are no less doubtful. Just as art shrouds, it also discloses both the lifeless and the living".[10]

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away from one thing by another and is unable to satiate himself with the spectacle as he may desire". According to Mathew (1963, p.93), Agathias thought that the beauty of *Hagia Sophia* lay in its being "so admirably a single, harmonious whole". If Mathew is correct – he does not cite any sources on this - we will have to conclude that Agathias, at least, managed to avoid being "perplexed" by the "spectacle"!

[9] Quoted Mango, *op.cit.*, p.61. The churches were not "readable" to both men, but their responses are not identical. Procopius found the design of *Hagia Sophia* to be inherently "perplexing"; while Choricius, somewhat like Photius in the church of the Virgin of Pharos, was "staggered" by the great abundance and variety of things to be looked at, which impeded his perception of the inner space of the church of St. Sergius in Gaza.

[10] My emphasis. Source: ed. E.A.Fisher, *Michael Psellus: Orationes Hagiographicae* (1994) 3B, lines 634-879, as ed. and trans. Charles Barber and Elizabeth Fisher in Psellos, 2017, pp.295-7. In an introductory essay to this passage (*ibid*, p.254), Barber declares arbitrarily that, "For Psellos, it is the orderly arrangement, the symmetry, of these parts, that reveals corporal

Art shrouds: and in doing so, it creates, not the glib clarity of the Renaissance's "readableness" but vividness, a word which as we all know derives from the Latin *vivere,* to live. Art does not proclaim Truth: it offers the possibility of discovering it to those who can penetrate its shrouds.

No modern writer has understood this central aspect of the Byzantine aesthetic more fully than the art and architectural historian Richard Krautheimer (1897-1994). He recognized, as had Psellos, that art must be neither neat nor graceful, that it must destroy perfect regularity: that it entices and instructs by concealing, evading, eluding. His writings on *Hagia Sophia*, in particular, read a little like a modern *ekphrasis,* and it is with a brief encounter with them that I propose to end this essay.

Hagia Sophia is built throughout on the principle of simultaneous statement and denial, Krautheimer declares. This principle is applied to the nave, where the soaring heights of piers, walls and domes are answered by horizontal marble veneers, arcades, fenestration, cornices. It is applied to the relationships of spatial units, which are clearly articulated, clearly disposed, yet not clearly delimited, for all expand beyond what would seem their natural boundaries. It is applied to the interaction of principal and subordinate spaces; their volumes and sequences "are all unintelligible". From the central square, the eye is drawn to the aisles and galleries, but their shapes cannot be discerned. The aisles and galleries, for their part, which are intended as places from which to see the nave, permit only fragmented views of it. "Parts of the main dome, parts of the half-dome, parts of the concave conches or straight arcades, parts of piers, are seen by the beholder, *who is never allowed to understand the whole design of the nave, or, indeed, of the building…* Fragmentation of

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beauty", but it seems to me that the passages from the Crucifixion *ekphrasis* that I have quoted suggest an entirely different perspective.

views and of a space which is nevertheless whole, marks the design of the building and its component elements".[11]

The aesthetic that gave rise to the mysteries of this wondrous building was not one that would tolerate the simplifications of normative symmetry. Indeed, Byzantium never went beyond the mere *idea* of symmetry (which, in fact, it seems to have reached only occasionally), to develop a *concept* of symmetry, with its norms and fallacies, comparable to the one that emerged in Renaissance Italy.[12]

It is not beyond the realm of possibility, however, that it was partly from Byzantium's gentle and ambiguous and merely intermittent awareness of symmetry that the belligerent Renaissance concept emerged. But this is just a surmise. As yet there is no evidence to confirm it.

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[11] Krautheimer 1986, pp.214,.216. The conventional narrative utterly misses the point that Krautheimer perceived so exquisitely here. See for instance one expert's reference to "the principles of symmetry, harmony and order to which the architects [of *Hagia Sophia*] gave a visible form" – Schibille 2014, p.215. Viollet-le-Duc, (1987, vol.2, p.188), evidently referring to the very features Krautheimer would celebrate, alleges that the church "is not perfect, and even shows in many parts carelessness and a decline in art"!

[12] The aesthetic of western Europe during medieval times was much closer to that of Byzantium. See *Fallacies* chapter 4, and its Appendix 2, "Ruskin on Gothic Architecture and Art".

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